

# MOTOR AGE

Vol. XLVIII  
Number 2

PUBLISHED WEEKLY AT 5 SOUTH WABASH AVENUE  
CHICAGO, JULY 9, 1925

Thirty-five Cents a Copy  
Three Dollars a Year

**What will happen eventually if dealers do not discontinue padding list prices with excess freight, finance, handling and other unfair charges?**

**Gentlemen, this is something to think about.**

**Now I have said it, choose your own firing squad.**

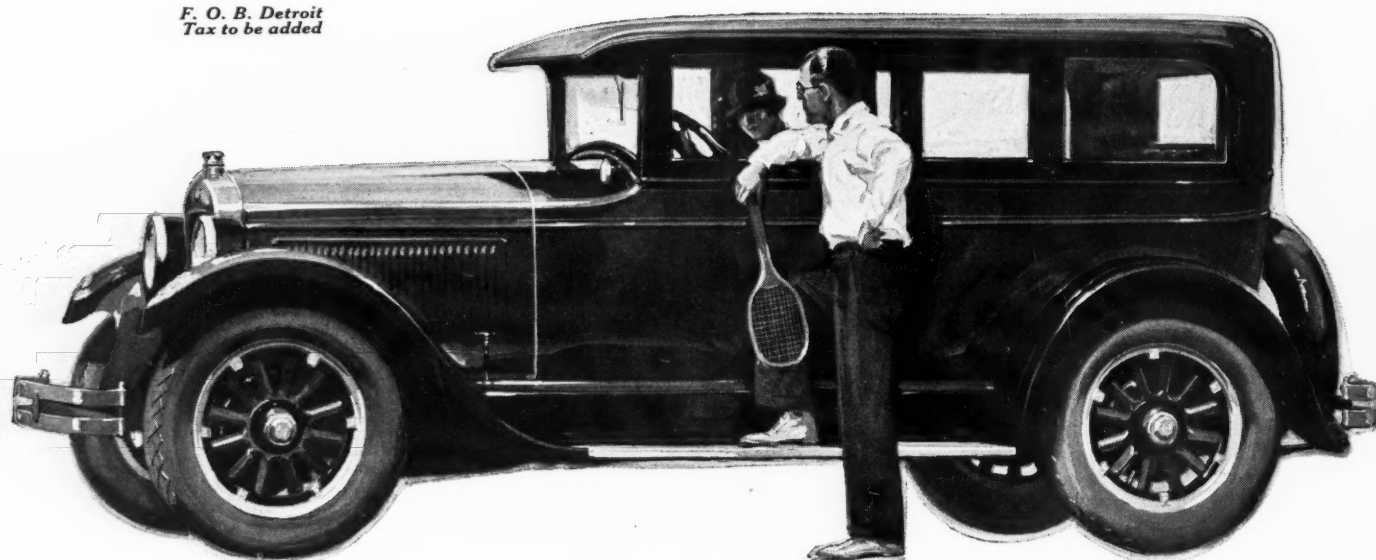
*Edward S. Jordan*

President  
Jordan Motor Car Company  
Cleveland, Ohio

**\$2195**

Five-passenger Sedan

F. O. B. Detroit  
Tax to be added



***The largest-selling eight*** of its type in the world! That is the proud position awarded to the Hupmobile Eight before it was six months old—because, in demonstration every day it is revealing to thousands, entirely new delights in the smooth performance and handling of a motor car.

*Lower Prices Now in Force*

Sales from the first have run so far ahead of the production volume on which prices were originally based, that on May 25 we were enabled to make substantial reductions. Five-passenger Sedan, \$2195 (formerly \$2375); Coupe, Two and Four-

passenger, \$2095 (formerly \$2325); Touring Car and Roadster, \$1795 (formerly \$1975); Dickey-seat Roadster \$1895 (formerly \$2075). Prices F.O.B. Detroit, tax to be added. Hydraulic four-wheel brakes; balloon tires; full equipment.

GET ACQUAINTED WITH YOUR HUPMOBILE DEALER. HE IS A GOOD MAN TO KNOW



**HUPMOBILE  
EIGHT**





# Only a Piston Ring

**QUALITY**

**NO-LEAK-O**

**DRAIN-OIL**

**SEAL-DRAIN**

**AND YET**

QUALITY BRAND PISTON RINGS, so well known by their individual trade-names QUALITY — NO-LEAK-O — DRAIN-OIL — and SEAL-DRAIN are the results of years of experiment, research and painstaking effort and are produced in the largest, most modern and best servicing piston ring plant in the industry.

it is such an important part of every engine that years have been spent in experimental work to produce a piston ring that would maintain proper compression, minimize crank case dilution and guard against carbon deposits.

There is a QUALITY BRAND PISTON RING for every requirement, with just the proper tension, that is accurately machined, easy to install, quick seating and long-lived.

Don't shop around: Don't guess: Don't experiment. You can buy and sell QUALITY BRAND PISTON RINGS quicker and easier.

If you haven't special literature, prices and discounts before you, write for them at once.

Service Department

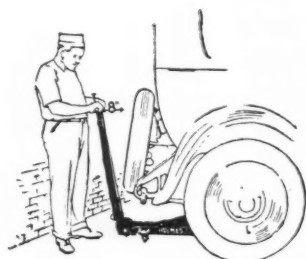
*The Piston*  
RING COMPANY

Muskegon, Michigan

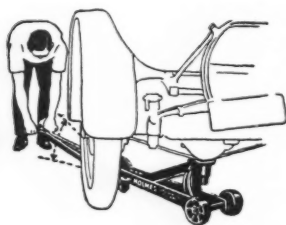


# Holmes Cantilever Jack

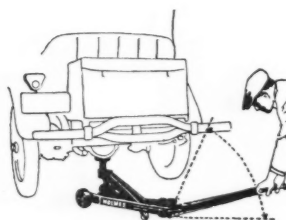
## "The ONE JACK for all jobs"



EASILY OPERATED IN  
CRAMPED QUARTERS



UNDER RUNNING BOARD



ANY LENGTH STROKE

When you need a jack you don't want to waste half your time looking around the shop for "that high jack" or "that low jack."

Your time is worth money.

With a Holmes Cantilever Jack all this waste time is eliminated as it combines the range of both the low type and the high type jacks and will handle all jobs faster, better and more efficiently.

The Holmes Cantilever Jack is "The One Jack for All Jobs." It is low enough to get under any car with flat balloon tires. It starts at 6 inches, lifts the car full 8 inches—twice the lift of the average jack—and permits a complete change of tires with one operation. This extremely high lift, plus a platform adjustment of 3 inches, gives ample range to handle any car, balloon equipped or otherwise.

It is extremely easy to operate, even in cramped quarters, the stroke of the operating lever is variable from 8 inches to full movement and the pull on lever is constant throughout entire stroke.

*Look over the important features which are listed below and let your jobber explain what they mean to rapid, efficient garage service. See the Holmes Cantilever Jack on his floor or write this company for complete catalog.*

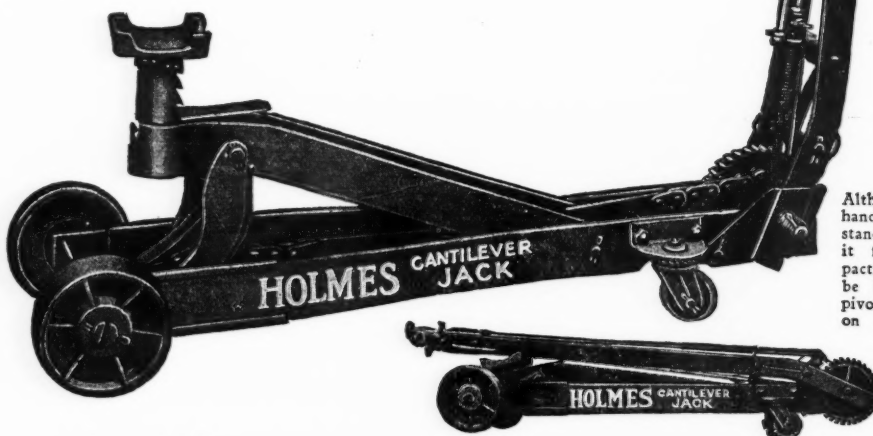
Price \$36.00

**ERNEST HOLMES COMPANY**

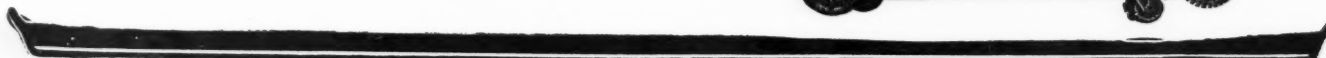
Chattanooga, Tennessee

### Features!

- Drops to 6 inches
- Lifts Car 8 inches
- Raises to 17 inches
- Lifting Platform quickly adjusted
- Extremely easy to operate
- Operates From Any position
- Quickly Placed in Position
- Swings Under Wheels
- Platform and Post Extra Large
- Clearance under Frame 11-4"
- Roller and Ball Bearing
- All working Parts exposed but Adequately Protected
- A Four Wheel Jack



Although the handle normally stands upright it folds compactly or can be locked for pivoting jack on casters.



# MOTOR AGE

Reg. U. S. Pat. Office

VOL. XLVIII

No. 2

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Subscriptions accepted only from the Automotive Trade  
 Entered as Second Class Matter Sept. 19, 1899, at the Post Office at  
 Chicago, Ill., under Act of March 6, 1879.

## To Sell 'em at the Pump



When Ford, Chevrolet or Overland owners drive up for gas—call their attention to the Tasco Gasoline Gauge hanging on your pump equipment—and more than half of them will buy.

That's the experience of dealers who've tried it. You "ask 'em to buy" at the very moment when the need for a good gauge is greatest. Sells on sight—put one out where your customers can see it—and they'll do the rest. Liberal profit for you.

### SELLING POINTS:

Guaranteed for the life of the car  
 Made by a reputable manufacturer  
 "Lift the seat and look" much easier than the old fashioned measuring stick method  
 No more guess work  
 No more "out of gas"—with business appointments delayed, family cross or sweetheart discouraged  
 Screws in place of the filler-cap so anyone can read the gas at a glance

Sells  
Quick  
at  
\$1.25  
 Retail

Order Tasco Gauges today.  
 Be sure to include some for the 1925 Chevrolet and Overland models.  
 Most jobbers have them—ask yours—if he hasn't—ask us.

NOTE: Dealers now handling Tasco Gauges should write the factory for this new steel outdoor display rack. Mention jobber's name. Send post-card at once.

## THE AKRON-SELLE COMPANY

"40 Years in Business"

AKRON, OHIO



*More People Use TASCO Gauges—  
than any other kind. Look for this Dial*

FORDS, CHEVROLETS and OVERLANDS





**Sure!**

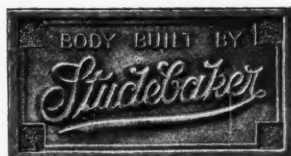
**The Only Way to Save  
Time, Money, Labor**

**I peel 'em**

So does everyone in the business who wants to cut bearing adjustment costs in half. And a much *better* job — accurate and smooth. PEEL 'em for profit. Your jobber sells Laminum. There's a shim for every type of engine.

LAMINATED SHIM COMPANY, INC.  
14th Street & Governor Place Long Island City, N. Y.  
St. Louis: Mazura Mfg. Co.

**LAMINUM**



*This symbol means that Studebaker prices do not  
include the profit of outside body-makers*

STUDEBAKER Cars will always be modern and up-to-date, for Studebaker has discontinued the custom of presenting new models each year. No need for the buyer to wait for yearly changes. No danger of new cars becoming obsolete. Just think what a powerful sales argument this gives to Studebaker dealers.

THE STUDEBAKER CORPORATION  
OF AMERICA  
SOUTH BEND, INDIANA

T H I S I S A S T U D E B A K E R Y E A R



**F**ACTORY quotas are dealers' nightmares, and the larger the production the more horrible the dream.

This is the stuff that overhead is made of and overhead is the demon that devours the dealer's profits.

I want to see Stutz dealers sell a fair amount of cars in their territory, but I am vitally interested in seeing them earn a reasonable profit.

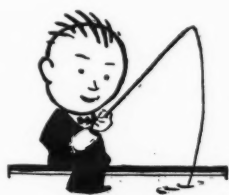
**FREDRICK E. MOSKOVICS**  
President  
**STUTZ MOTOR CAR COMPANY -**  
OF AMERICA, Inc.  
INDIANAPOLIS, INDIANA.



# Raise, Lower and Steer the Load from Any Angle....with Comfort



Steer where you want it by twisting the handle.



Drop us a line for details of husky utility that the New Way Jack delivers. You're welcome.

High axles or low...in narrow spaces and tight corners especially, you'll find this Weaver New Way Jack a wonder-worker.

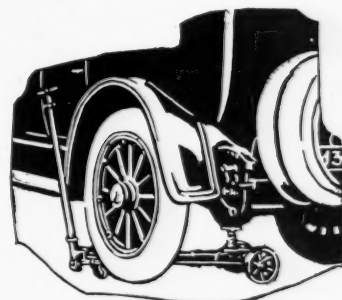
You steer the New Way as you would a car. A slight twist of the handle cuts the wheels to right or left...an exclusive feature. Naturally it's easier to steer this jack to the right point under the car and to guide the car on the jack where you want it. The handle is always upright...off the floor and ready to grasp.

In garage or repair shop, it speeds up the shifting of "dead" cars. Nothing like it for unloading new automobiles from freight cars because when you steer it you steer the entire load.

Rubber tired wheels at slight additional cost if you want them.

**Weaver Mfg. Company**  
**Springfield, Ill., U.S.A.**

**Weaver Canadian Company, Ltd**  
**Chatham, Ont.**



Note how easily the New Way Jack can be applied from the side of a car in crowded corners.



How unloading automobiles from freight cars is simplified through the use of the New Way Jack

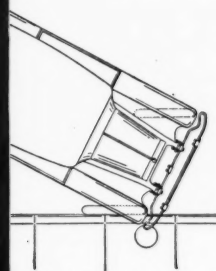
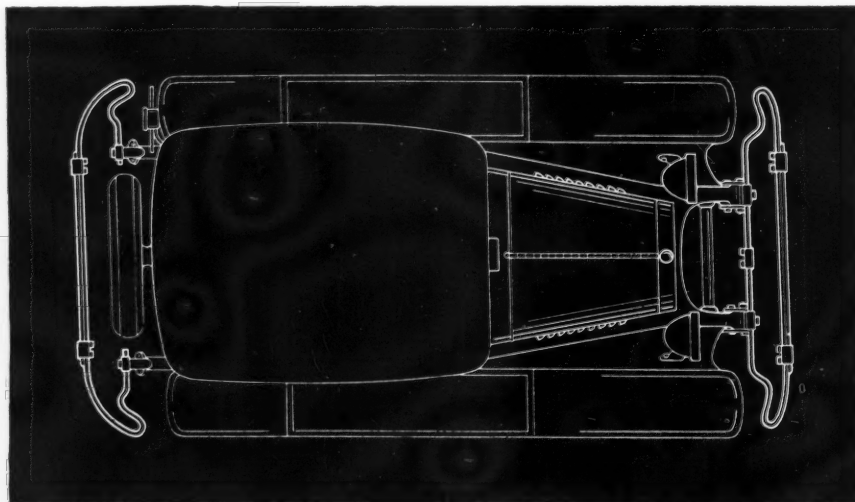
Ask your Jobber's Salesman  
— He's a **WEAVER** Representative

# WEAVER

## NEW WAY JACK



ADV. PICARD-SOHN, INC., N. Y.



Note the correct length of the WEED Front Bar. Just long enough to give proper fender protection without hooking on obstructions.

## Correct design sells **WEED BUMPERS** 5 points that interest car owners

You can *sell* WEED Bumpers. And you don't have to stop when you have shown customers how strong they are, and how well they look on the car.

First, WEED Fittings place bars at *correct height*, the height recommended by the S. A. E. This, even on light cars like the Ford.

WEED Front Bars are just the right length. No hooking—no tangling on curb obstructions in parking. Yet they protect fenders perfectly.



Note the depth of this bar. WEEDS combine proper curvature with added shock-space between front and rear bars. Every car owner appreciates this point.

WEEDS are *compact with the car*, for close work, for ease in parking. Look at the deep swing of the rear bar in the dia-

gram above. Plenty of room for a spare. And yet the ends sweep forward in a graceful curve to the fenders.



There's a WEED model that looks just right for practically every car made. The fittings are simple, strong and easily attached.

And here's a point you'll like. WEEDS are sold by a reliable jobber near you who helps you in the matter of stock; who can give you prompt delivery on bars and fittings.



If you're a car dealer, ask your WEED Jobber to send you the models we recommend for your particular car, complete with fittings. Install them. See how they look. They'll help you sell your cars, and *you'll sell more bumpers*, for you can *sell WEEDS*. They have *real selling points*.

**AMERICAN CHAIN COMPANY, Inc.**  
BRIDGEPORT, CONNECTICUT

In Canada: DOMINION CHAIN COMPANY, Limited, Niagara Falls, Ontario  
District Sales Offices: Boston Chicago New York Philadelphia Pittsburgh San Francisco



# MOTOR AGE

Vol. XLVIII

July 9, 1925

No. 2

## *Summary and Index of Important Events in* **This Week's Automotive News**

*Detailed Stories from MOTOR AGE Staff Writers and Special  
Correspondents Appear in News Section Beginning on Page 32*

**S**ALES conditions are still better than normal although slackening 10 to 15 per cent below June high mark. Page 32.

Kissel announces price reduction. Page 32.

Goodyear, Miller and General tire and rubber companies increase prices on tires and tubes from 10 to 15 per cent as result of British restriction act. Page 43.

Preliminary estimates of June automobile production place number shipped from Detroit at about 400,000. Best former output was 386,539 in June of 1923. Page 39.

Indianapolis survey shows used car trade in good shape with about four-fifths of present stock being current makes and models. Page 34.

Hope for national organization of truck and bus operators is blasted at convention of A. A. A. Page 33.

A. L. Haskell, general manager of General Motors Export Co. resigns. Page 33.

President A. B. C. Hardy of Olds Motor Works resigns position to stay in Lansing for few months for rest. Page 39.

Twenty automobile dealers in Huntington, W. Va. open "Buy-a-New-Car-This-Year" campaign. Page 43.

Dealers in North Carolina report business has increased with early June setting record for sales in like period. Page 35.

Mississippi registrations in first six months of 1925 are double those of like period of 1924. Page 37.

Mooring mast is completed at Ford's Detroit Airport. Flying Club is given 120-acre aviation field on lake front. Page 38.

Salt Lake reports sale of new cars continues satisfactorily with registration advancing steadily. Page 39.

Officers of Southern Automotive Jobbers' Association pick Asheville, N. C., for summer convention July 23-25. Page 34.

New laws enacted at last session of Oregon legislature are expected to materially curtail automobile thefts. Page 35.

Sales in Louisville during June register big advance with all prices moving well, many of them better than same period last year. Page 35.

Paige-Jewett opens nation-wide sales contest with trips to factory as prizes. Contest closes October 1. Page 37.

Sales in Milwaukee are expected to continue upward trend throughout July, April, May and June are quiet months. Page 38.

Marmon earnings for first six months of 1925 are reported as \$1,178,198 by President Williams. Page 38.

Rim and Wheel Distributors Association, organized recently, plans to standardize service methods and catalogs. Page 42.

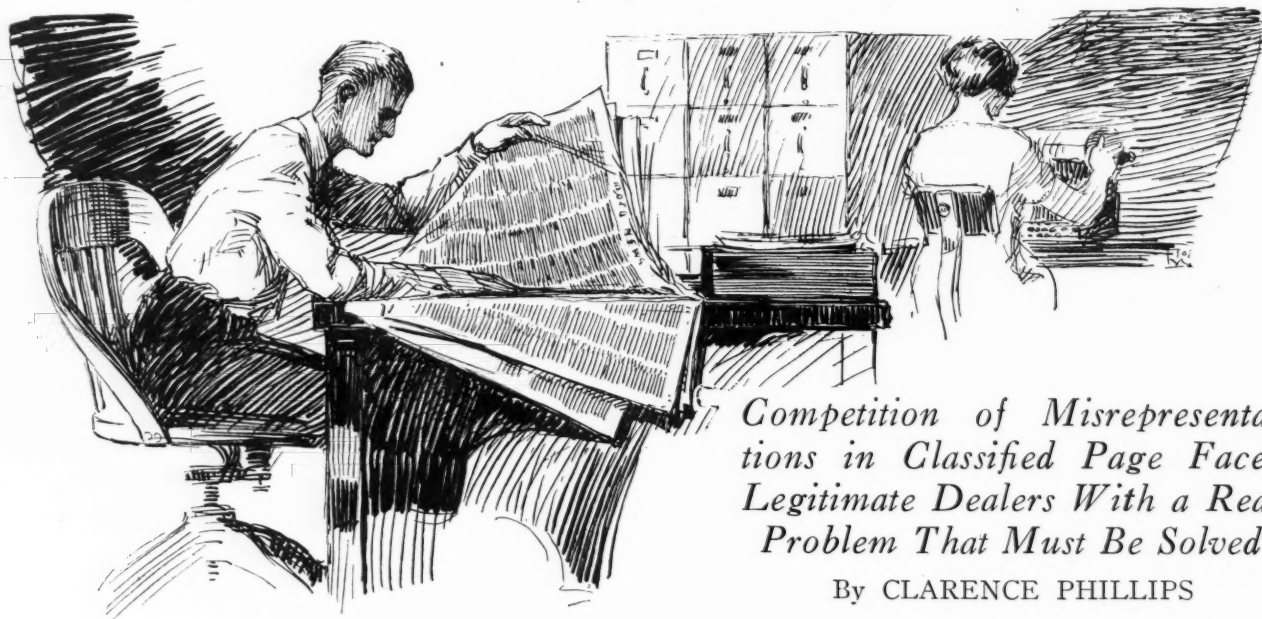
Night air mail service between New York and Chicago is inaugurated July 2 by Postoffice Department. Page 42.

Prizes are awarded in sales contest held by Ford Motor Company of Canada, Ltd. Page 37.

*In Next Week's Issue—Writing the Used Car Ad*



# Licking the Gyp in Used Car Advertising



## *Competition of Misrepresentations in Classified Page Faces Legitimate Dealers With a Real Problem That Must Be Solved*

By CLARENCE PHILLIPS

**I**N the sale of used cars the trade has become a liberal patron of the daily newspaper's classified columns. The amount of money spent by automobile dealers of this country on such insertions is necessarily enormous and the sums spent by individual companies often runs into large figures.

Demand by the trade for classified space has established this section of the daily paper as a standing directory for the used car shopper.

When he wants to buy a used car the first thing he does ordinarily is consult the classified ads. Most often he has an idea as to the makes of car he prefers and he knows definitely how much money he can allow for the purchase. What he is looking for is the car that will fit both his pocketbook and his notions.

What he is looking out for is the proposition that does not hit him as exactly square and honest. To begin with the used car shopper is a decidedly suspicious and skeptical person. He is exactly in the same frame of mind as the man who shops for a lot or a house or an opportunity to invest his money profitably. There are many gold bricks and gold brick artists in the world and his first desire is to give them as wide a berth as possible. He wants an honest buy.

### *The Resistance of Suspicion*

This typifies the group of prospects that you deal with when you cast into the classified section of the daily paper for used car leads. To make a sale you must batter down his suspicions and win his confidence. You must convince him that you do not belong to the gold brick colony, that he can depend upon your merchandise as being of the quality represented. That goes, of course, with a sale of any sort—whether a suit of clothes or a piano—but the resistance of suspicion is so pronounced in the case of the used car shopper the dealer is called upon to present assurances that are exceptionally strong. There is no denying that in the automobile section of the classified page are many misrepresentations. Gyp dealers are given to practicing much black art in this direction while private owners often run the gyps a close second or even exceed their best efforts.

The advertising committee of the Chicago Automobile Trade Association, recognizing the general evils of this

sort of advertising, is conducting an investigation through which it is hoped a remedy will be realized. The committee sees the legitimate trade is in competition with unscrupulous persons who have used cars for sale and who will go to any limit to sell their cars. Misrepresenting facts concerning a car is the least of the worries of this element, especially when the house has no reputation to preserve or when the individual has but one car to sell.

But such falsifications do untold damage to the legitimate business of selling used cars and it is the legitimate trade which suffers in later days and years from the effects of this wholesale bilking.

If the Chicago association arrives at some effective method for eradicating or reducing this evil it will accomplish much toward facilitating the movement of used car sales through the proper channels. It will score a great accomplishment if it merely succeeds in drawing the line, so the public will see it, between dishonest methods on one side and honest methods on the other—the side of the legitimate automobile dealer.

### *The Safest Place to Buy*

In fact, the public has been rapidly learning that the safest place to buy a used car is from the reputable dealer whose integrity is known and who is in a position to give a wide range of service. The proportion of this business going to the reputable dealer is constantly growing greater—and it will grow in the future commensurate with the trade's success in convincing the public that the risk is always less when the buyer does business with the legitimate merchant.

There is but one way in which the trade can successfully meet this competition of misrepresentations. That is for the trade to sell the public on its integrity. It must match its honesty against all comers and be ready at all times to fight for its good name.

Right now, however, in Chicago and elsewhere the problem of the individual dealer who makes use of classified space is—how most effectively to use such space in the development of leads, notwithstanding misrepresentations by unscrupulous competition and other present complications. Some day, we hope, conditions will justify the used car shopper in refusing to question the veracity of adver-





They are the ones who have solved the problem of overcoming the used car shopper's suspicions and they have set forth one fundamental rule by which the legitimate and scrupulous tradesman can down the competitor in the classified columns who resorts to misrepresentations.

In casting into the classified columns for used car leads it is apparent that the first essential is for the dealer to put the veracity and integrity of his house behind his merchandise. The heavier the trade's pressure along this line the more completely will the falsifier be crowded out.

The type of copy used by the dealer who has seen to this first requirement is much a matter of opinion.

But it does stand out in the investigation just made that the ad carrying a more or less full description of the car offered for sale is proving the most effective. Which seems logical if you will put yourself in the place of the prospective buyer. Not only does he want to know what the car is worth, what type of car it is and that the house listing the car can be relied upon—but he likes certain details. Your ad which merely gives the make, model and price might draw the prospect to your store, which would be ideal, but he is more likely to go to the place offering a car fully and effectively described. A number of striking instances have been found wherein "stickers" were moved by taking them out of group lists and using the single ad with free description. In one case a dealer had been given considerable grief by a car of ancient design that seemed impossible to move. It had become the joke of the place. It had appeared in the group lists time and again, disappearing from print entirely for a while and reappearing again—one of the patent standbys. The price was \$125, a ten line classified ad was used in which the car was fully and candidly described—and it sold at once. Another dealer declares that while he usually starts the hard-moving model in the group list he seldom moves it until he advertises it separately.

One of the most convincing group insertions in an issue of an eastern paper recently contained rather full descriptions of cars offered at \$120 and \$75 respectively. The notices stated frankly that the cars were old models and not in the best condition but that they would serve the purposes of certain owners who would accept them without guarantee. The other cars listed were offered as values that the company would stand behind, and the natural reaction of the person reading the ad was that this company was doing its best to correctly represent its merchandise. There is nothing wrong in capitalizing your honesty. In fact, the merchant who expects to be permanent must capitalize it in one way or another.

But if full information is a good effective in classified advertising many dealers throughout the country must be missing frequent opportunities, for a study of numerous classified pages reveals that a large percentage of auto-

mobile copy fails to give more than very meager information.

If it is a fact that vital importance attaches to giving the price many dealers are constantly overlooking good bets. There are those who appear carefully to avoid stating price.

That considerable effort is lost through merely giving the name of a model which bears an unusual factory name without classifying the model to its general type, as open or closed, etc., or in other words, giving the shopper a definite picture as to what is offered for sale—is one fact which is clearly apparent. Newspapers contain many insertions of this character. The point made here might be illustrated with reference to questions which were put to 20 persons selected at random.

The first question was: "What is a phaeton?" Six of the 20 admitted they did not know and while most of those remaining seemed to know the phaeton some were doubtful. The next question was: "What is a brougham?" Thirteen gave more or less satisfactory replies while seven were unable to classify the brougham. The third question was: "What is a victoria?" Five knew and there was either total ignorance or doubt in each

of the other 15 who answered.

These are some of the better known "odd names," we might say, in automobile terminology. Phaetons and broughams are so well known in the parlance of the trade that a dealer might think the names would convey a definite conception practically to every member of America's automobile-wise public, from which we draw prospects, but the general public even in automobile-wise America, is not so conversant with automotive terms as is the person who is in the automobile business.

Hence, to advertise a car with the odd designation of model it is clearly wiser always to accompany the notice with enough description to let the shopper know the general type of body.

Otherwise, while it might be the very type of car for which he is seeking, the advertisement will fail to tell him as much and he will simply give it a passing glance and "shop on down the column."

Discussion of classified advertising could be carried on indefinitely but after all has been said and we seek for the outstanding essential in effective advertising we arrive at this fundamental generalization: That the forces making for effective advertising are found in the policy of the house.

Effectiveness begins with TRUTH and a reputation for fair dealing.

It does not take the public long to identify and locate the merchant upon whose representations it can depend. And it is just as quick in locating the merchant of the other variety.

**WELCOME HOME, BEARS**  
Let's all root for the Bears today, and if you are in need of an automobile, stop in at 1240 Broadway after the game and see these splendid values.

1923 WILLYS-KNIGHT TOUR—  
Looks just like new; has seat covers, windings, etc.; priced right; easy terms.

1924 OVERLAND RED BIRD—  
Driven just a little ways; is as good as new; a bargain.

1923 CHEVROLET COUPE—  
Upholstering and paint like new; has bumpers front and rear, motometer spotlight extra tire, etc.; a snap.

1923 WILLYS-KNIGHT COUPE—  
A 4-passenger car that is bound to appeal to the person who is looking for a good car reasonably priced.

1922 DODGE SEDAN—  
A well-kept family car that is worth more than we are asking.

1920 MARMON SEDAN—  
Cost \$7,200 new; will sell cheap; in excellent condition.

Open Evenings.  
OVERLAND-KNIGHT SALES CO.  
1240 Broadway. Champa 7777.

**BUY YOURS NOW. THREE-DAY SPECIAL ON FISHING CARS.**

Ford touring, lots of extras—\$200  
Ford sedan, late model—\$400  
Overland touring—\$400 down  
Vette touring, looks like new, has not gone 9000 miles—\$250 down  
Cleveland touring, late model, lots of extras—\$240 down  
Maxwell touring, 1922 model, runs fine, will take—\$200 down

**REMEMBER**  
you will get your money's worth in any used car you buy from  
LOGAN-GRANT CO.  
RIV. 426. W707 2D AVE.

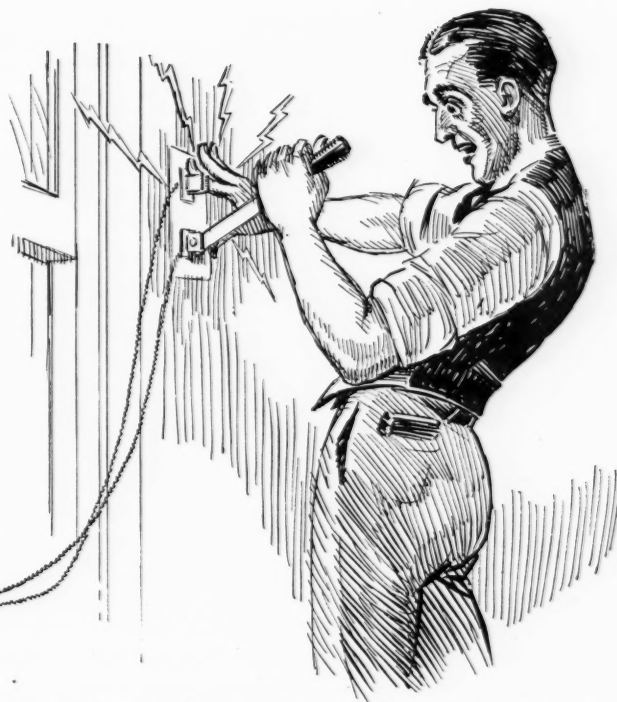
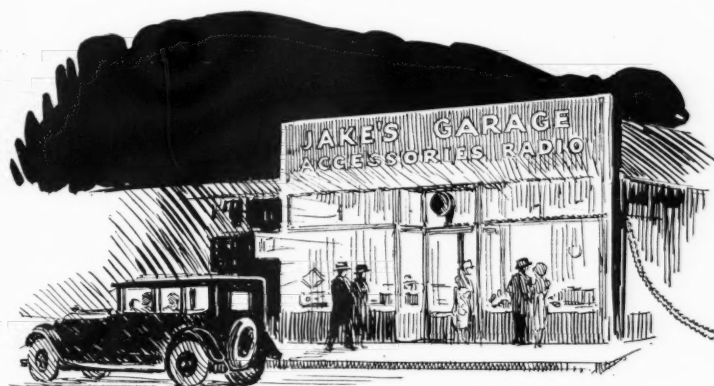
*The timely thought frequently adds to the force of a classified ad. Here is where a Denver dealer capitalized the opening of baseball season while a Spokane dealer exploited fishing season. The Eldridge Buick Co., Spokane, used the third ad in this group which makes a bid for attention with its novelty*



# Ignition Principles—

*Valvy Is Shocked by a Cutout and the Red Head Gives the Reason*

By A. H. PACKER



"FIXIN' up a new radio set in summer?" Valvy stared in wide-eyed astonishment, as he opened the shop door and saw Jake hard at it so early in the morning. "Thought you had enough to do without monkeying with that stuff this time of year." Jake only smiled.

"It may look queer, at that," said Jake. "The fact is, this is a new stunt, that's one reason. This attachment is supposed to bring in extra long waves, while this other jigger brings in the short ones. That part of it doesn't interest me so much, but I want to get all ready for the fall business. These folks round here do not have much to do and they will take to radio more this next season than ever before. If I start now, I can take it easy, doing a little each day and have everything the way I want it when the season starts in. Not only that but I will know something about the set I decide to handle."

Just then Red came in.

"One thing bothers me, though," continued Jake. "I want to rig this set up, so I can leave it turned on nights, working the four speaker over the transom of the shop, and be able to turn it off from my house, which is about 500 feet away."

"You might run your A battery current over to the house and back, and have a switch there," said Valvy.

"But the voltage you would have left at the tubes, you could put in your eye," said Red. "Perhaps a relay of some sort would do the trick. We might even use an old cutout, disconnect the series winding and use the shunt coil to close our circuit. Then we would only carry about one-thirtieth of an ampere over to the house and back instead of nearly two amperes."

Jake decided to rig up such a scheme if Red would figure out the details, so a few days later, everything had been completed and Red went over

to Jake's to try out the remote control feature. In a few moments he came running back to the shop, surprise written all over his face, easily traceable in spite of the dirt.

"What 'jer think," he wailed. "I got a whale of a shock off that there switch, and nothin' connected but a six volt battery."

"Except the radio set and the cutout," added the Red Head.

"What's the radio got to do with it," Valvy whimpered. "I betcher there's high tension juice got inter those wires. I most got knocked onter the floor."

"Oh, it's not that bad," said Red. "There's no hot stuff there, and the radio is probably innocent, but the fine

winding of the cutout will give you a good jolt if your fingers are sweaty and you break the circuit just right. What you get is not due to the battery itself, but to the sudden voltage produced by the changing magnetism in the cutout when the current dies down. It's a jolt of that sort that fires the gas in a make and break ignition system, but it doesn't feel so good in your human system. Everything in its place you know."

Valvy was still far from placated, but Jake's interest was roused, and during their lunch hour he insisted that Red explain the whole thing to him.

"It's about this way," said Red when they had a chance to sit down and talk things over. "We figured out the way that electricity produces magnetism, and I suppose it's no more than fair that there is also a way that magnetism can produce electricity."

"When we had a wire wound around a piece of iron or steel, there was no magnetism produced until there was a current flowing in the wire. That is we had to have *electricity in motion*. In similar manner we find that it

## BILL FIXIT STORIES

No. 7

PREVIOUS installments in this series by A. H. Packer were published March 19, April 2, April 16, May 7, May 21 and June 18, 1925.

**SYNOPSIS:** Bill Fixit's electrical trouble shooting men start on a trip in a Speedway car. They stop at various places along the way and at the Welsh mines are requested by Sandy, the foreman, to help out in fixing up a gasoline pumping engine, some strikers having wrecked the steam pumps. While there the money they had is stolen from the car, so they are forced to seek employment in Coal City with Jake Penders, the local electrician.

While at Jake's place a customer buys a tire, paying for it with a bill that Red afterwards recognizes as one stolen from them. Red goes after a job of wiring trouble that Jake had previously fallen down on, fixes it and then tells how it was done. At another time he explains the principle of electro magnets, and shows how understanding of the principles would help out on an occasional job.

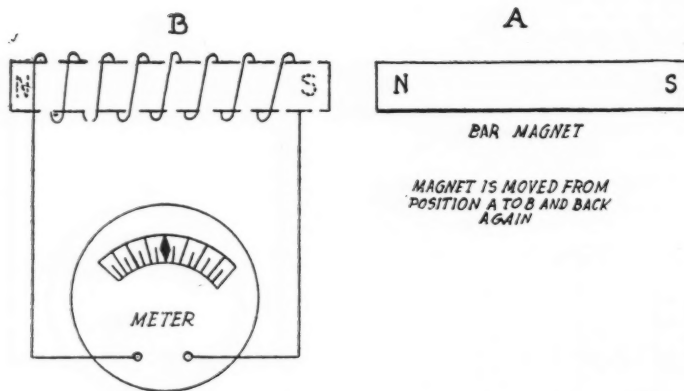


Fig. 1. Changing the magnetism in a coil generates a voltage

magnetism by itself does not produce electricity, but it has to be *magnetism in motion* or *change in magnetism*.

"If we want to do a little experimenting after a while we can wind up a coil of wire and connect it to a meter. Then we can use a magnetized piece of steel or permanent bar magnet and move it in and out of the hollow coil which is connected to the meter. Doing this will generate an electrical pressure or voltage in each turn of wire in the coil. (Fig. 1.)

"If we try to use an ordinary ammeter, nothing much will happen for the current that will flow in the coil will be slight. If we take a voltmeter we may get a slight movement of the needle. The best bet however is a millivoltmeter. If we did not have our testing set here we could try the experiment by taking one of the old style ammeters used on the higher priced cars, and cut the shunt in two to make a sort of millivoltmeter out of it. Then in the test (Fig. 1) we would find that the needle is considerably affected.

"We would also find that moving the magnet quickly gave a greater deflection than moving it slowly; that moving it out reversed the needle deflection as compared with moving it in and that leaving the magnet stand, either in or out of the coil would generate no voltage.

"We would then conclude that the voltage generated is proportional to the speed with which the magnetism from the bar cuts across the turns of the coil and that as far as the coils are concerned, it is *change* in magnetism, rather than magnetism which does the work.

#### What Probably Happened

"When Valvy was working the switch over at the house he probably got hold of both live sides of it when he jerked it open, thinking only of the fact that we had but six volts on the line. The current flowing through the cutout coil, however, made it a different proposition, for there was an inductive kick or sudden voltage generated which though it lasted but an instant, may have been 150 volts, or so, being produced by the dying magnetism, which cut through the turns of the coil while the current was dying out.

"Working on the basis of changing magnetism and the fact that an electrical current in a coil can produce magnetism we have discovered the foundation principles of a battery ignition system. In Fig. 2 we have a long bar of iron, at the left of which we have a coil connected to a delicate meter, while at the right we have another coil connected through a switch to a battery.

"The coil at the right is going to magnetize the iron and the one at the left is going to have a voltage generated

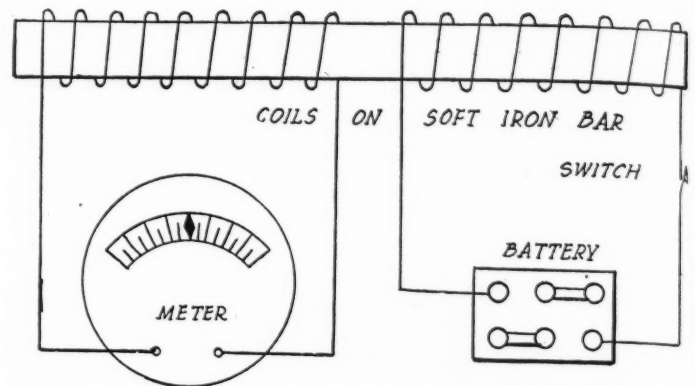


Fig. 2. Changing current in one coil produces a voltage in the other coil

in it whenever the magnetic condition of the iron changes. We will then find that when closing the switch of the battery circuit, that the meter IN THE OTHER CIRCUIT will kick to one side, and when we open the switch again the meter will kick to the other side. With the switch left open or closed however, we find that the hand on the meter settles back to zero, showing again that change in magnetism and not just magnetism generates electrical voltage.

#### Variation of Experiment

"In Fig. 3 we have a variation of this experiment. We still have the left-hand coil connected to a delicate meter, but the one at the right now has an ammeter and rheostat connected to it as well as the battery. We can now close the switch and turn the rheostat slowly and we will find that there is a slight deflection of the meter connected to the coil at the left. If we turn the rheostat rapidly the deflection will be greater, so we see that **THE FASTER THE CHANGE IN MAGNETISM THE GREATER THE VOLTAGE PRODUCED.**

"Another experiment might be made with the circuits of Fig. 3 by changing the number of turns of wire in the coil at the left, and if we did this and left other conditions the same we would find that with a coil of many turns there would be a greater deflection of the meter needle, showing that, **THE GREATER THE NUMBER OF TURNS, THE GREATER THE VOLTAGE INDUCED.** This is just common sense, for all the turns of wire on the bar are affected by the magnetism and as they are in series with each other their voltages add up.

"We then come to the conclusion that for a battery ignition coil we want many turns of fine wire to get a high voltage for producing the spark, and that the quicker we can change the magnetism, the better the results will be. The fine wire is used, not because the size affects the voltage, but because with fine wire we can get a large number of turns in a coil of reasonable size.

"It is one thing to say that we want a sudden change in magnetism, and it is another thing to get it. If we close the switch in Fig. 3 and watch the ammeter at the right closely we will see that its hand comes up rapidly but not immediately to the current reading. If we would take the same wire that is in the right-hand coil and stretch it out in a large loop, instead of winding it on a bar we would find the meter hand a little quicker. In other words, the current builds up slowly in a magnetic circuit.

"If we figure the reason, we find that the current in rising builds up magnetism, and this rising or changing



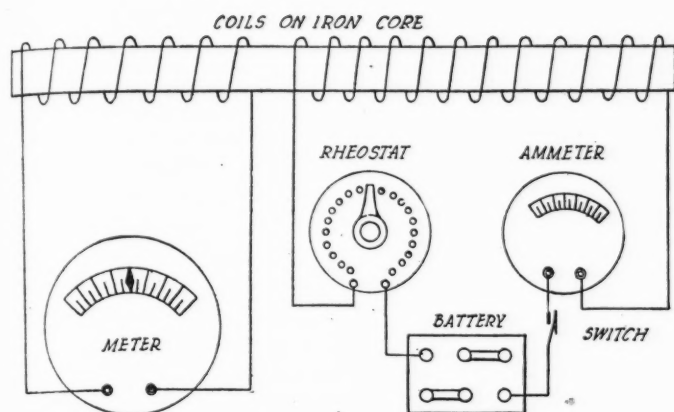


Fig. 3. Variations of battery current in circuit at the right produce induced currents in left hand circuit

magnetism generates a voltage, not only in the other winding, but also in the winding carrying the battery current. This voltage is always contrary, and opposes the action producing it so that when we are trying to quickly magnetize the bar, it has just the opposite effect.

"Referring now to Fig. 4 we have shown the elements of a battery ignition circuit, where a battery sends current through a coil and through an interrupter or pair of contacts, back to the battery. In this illustration we have shown one terminal of the battery and one of the interrupter contacts grounded. To ground a circuit means to connect it to the engine, or the frame or to any metal part of the car connected to the engine or frame. In this way the car frame carries the current back to the battery and saves a wire.

"We have also in Fig. 4 shown a secondary winding connected, one end to the frame or ground and the other end to a spark plug. The winding connected to battery we call the primary because its action is first or primary.

"Referring now to Fig. 5 we have a curve or sort of picture showing what happens in our ignition circuit. Distances measured up means amperes or current while distances from left to right indicate time. Starting near the left on the horizontal line we have a time indicated where the points close. As soon as this happens the current starts to flow in the primary winding but it comes up slowly due to the bucking voltage of self inductance. With a slow rise in current we get a slow rise in magnetism and consequently a poor result in the secondary winding.

"It is for this reason that no ignition systems are made which have the spark occurring when the points close and the current builds up in the primary.

"The next possibility is to have a spark when the interrupter points open and the primary current and consequently the magnetism dies out. Here however, we find the same opposing force or self inductance working, for when we try to kill the primary current, this action tries to maintain it. This accounts for the arcing at switch contacts when a circuit is broken, and the more highly magnetic the circuit, the greater the tendency for arcing.

#### Current Drops Off Slowly

"In fact the arcing at the interrupter contacts will be so bad that the current instead of dying out immediately drops off slowly as shown in the right part of the curve of Fig. 5 so that again we get no secondary spark worth having.

"It is at this point that the battery ignition idea is saved by an electrical device known as a condenser, which

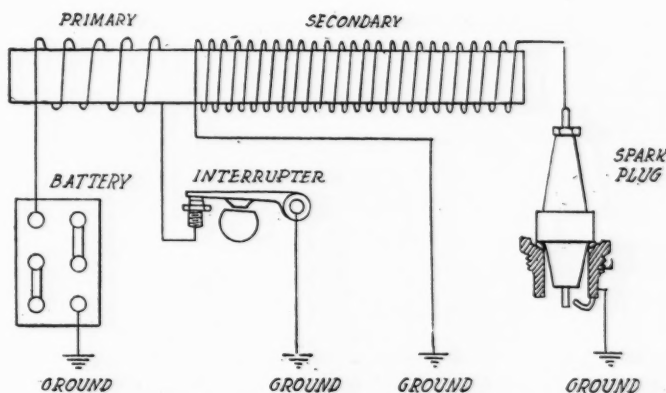


Fig. 4. Elementary battery ignition circuits. Without a condenser at the points the results are poor

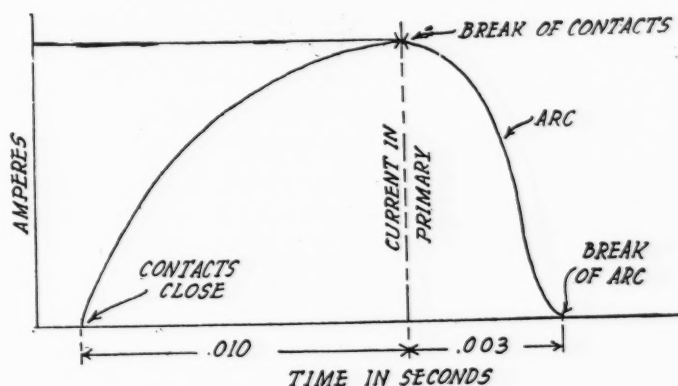


Fig. 5. Self inductance makes current slow to build up or die out in a magnetic circuit

acts as an electrical shock absorber and stops the arcing at the contacts to a great extent, thereby giving a sudden break to the current and accordingly a high voltage and spark in the secondary winding."

Valvy had been listening in on Red's explanation to Jake, but it was old stuff to him. The new radio set with its many dials was a constant attraction. He slipped on the phones, threw the switch of the long wave attachment, lighted the filaments and took a whirl at the adjusting dials. Not much chance of picking up anything this time of day, but as in fishing, there was always hope.

Just as he thought, nothing doing. But what was that? A voice, indistinct and yet strangely familiar. A closer adjustment and the voice came in clear. "Ten truck loads tonight. No there's no danger. On this wave length no one can get us. And tomorrow night at one, remember."

"Bootleggers," thought Valvy, and jumped up, bumping the table. The long wave attachment teetered violently and Valvy grabbed it as it rocked dangerously near the table edge.

"What's the excitement?" cried Jake.

"Crooks planning somethin'," said Valvy. "A voice I've heard before."

"Some of your friends," said Red. "Let's have the phones, perhaps we can get the goods on 'em with this set." And Red listened intently, but there was no further conversation to be heard.

"Where'd you have the dials set, before you half knocked over the table?" Red wanted to know.

Valvy stared at the set and sweat broke out on his brow. "I'll be d-d-d-durned if I know," he stuttered.





*Parts such as the hood can be placed on a stand for spraying*

## Applying a Pyroxylin Finish to a Car

### *Handling the Spray Equipment—Putting on the Undercoats*

By B. M. IKERT

**A**FTER a car has been stripped of all the old finish the bare metal should be primed as soon thereafter as possible. It is well to call attention once more to the great importance of making sure that all moisture and foreign matter has been removed from under the mouldings and so forth. The time to do this is before the primer is applied and a few minutes spent in doing this will more than make up for the extra time required later on to remedy trouble caused by foreign matter.

So far as the application of the materials is concerned a great deal will depend upon the particular make of equipment used as well as the materials themselves. It is common to apply three or more coats of pyroxylin finishes to a motor car, the exact number of coats depending largely upon the hiding power of the color used. As to the air pressure needed this depends entirely upon the make and style of air gun used and here it is best to consult the

instructions sent with each air gun by the maker.

At this point it may be well to call attention to some of the things which must be observed in spraying pyroxylin finishes. What is commonly known as "spray dust" is caused by incorrect air pressure on the gun or by poor ventilation. In fact in the majority of cases it is the latter which causes this spray dust. Experienced operators are able to remove this spray dust by going over the whole surface of the car with a soft rag moistened in the solvent or thinner. It is also possible to remove spray dust by spraying a very light coat of the thinner over the car after the application of the enamels and before rubbing and polishing. However, this is a difficult job for the less experienced to perform, because the light spray of the solvent causes a reflow of the finish. It is this reflow of course, which removes the spray dust and smooths out the pebbled effect, and while this is the thing desired it usually can be done only by a skilled workman.

Mention has been made in previous articles that the application of pyroxylin finishes differs very materially from the ordinary varnish finishes, and whereas imperfections in the priming coats can be remedied with the following coats in a varnish finish, this is not so with a pyroxylin finish.

After the priming coat has been applied, in case of a pyroxylin finish and on top of this the surfacing coats it is the last chance the operator has to get the surface smooth and at this point a careful examination should be made of the entire surface of the car before the application of the enamel. Any imperfections, rough spots and ridges in the undercoats are greatly emphasized with the application of the final coats.

In using the air gun hold it about 6 or 8 inches from the metal to be sprayed and at a slight angle with the nozzle of the gun usually pointing slightly upward. The air gun should be worked lengthwise of the body of the cars and the spray laps should be brought quite close together, that is the gun should be swung from right to left and the material should not stop flowing from the gun when the latter is at arms length. It should be brought immediately back in the other direction so it will overlap the lower side of the material just applied by the swing in the other direction.

### *Spray on Thin Coats*

It is always a good plan to spray on thin coats of the material used. This is because the solvents may attack the priming and surfacing coats and if a heavy coat of the material is applied the surfacing materials may rise and form blisters and bulges.

The results obtained with an air gun in the application of pyroxylin finishes depends very largely upon the operator. Almost in every case where trouble is experienced it is due to the way in which the gun or material is being handled, assuming of course that the surfaces are clean and that the necessary precautions have been taken up to the point of spraying the material.

#### *Some Things to Be Observed*

"Curtains, sags and runs," are caused by applying too much of the material in one spot which naturally creates a run and the result is a heavy mass which hardens very quickly and is very difficult to remove. Such runs can be overcome almost entirely by properly using the air brush for which no specific directions can be given other than those which apply to the details of the gun itself.

Practically all of the material to be sprayed must be reduced about 5 per cent more than when applied by hand brush method as this proportion of the solvent or thinner is atomized out of the material when it is applied. It is very important to regulate the pressure correctly for the specific material as insufficient pressure will cause a rough or spotted finish while the proper pressure produces a smooth glass-like finish. Light liquids are applied usually with pressures as low as 30 or 40 lbs. while very heavy liquids are applied with pressures as high as 80 to 100 lbs.

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#### *How to Use the Air Gun*

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Every now and then the operator runs into a condition when applying a pyroxylin finish wherein the coat turns color. This happens occasionally in some climates and in the language of the paint shop is known as blushing and the remedy for this usually is to spray on a coat of solvent or thinner which can be applied over the wet pyroxylin material and which should bring the color back to its original shade.

The first coat applied to a car in a complete nitro-cellulose system is called the priming coat and forms the foundation of the whole structure. The primer usually carries sufficiently finely ground color of some kind such as red oxide of iron to enable the operator to see whether or not an even coat has been applied over the entire surface.

In use the primer must be stirred thoroughly from the bottom of the can up. Then it should be strained through a double layer of gauze or cheesecloth, pouring it from the can to the container used on the air gun. A thin or medium coat of primer is recommended. If the primer is too thin it will not stand the sandpapering operation which follows and if too heavy a coat is applied it may not dry quickly enough. Usually the primer will air dry in twenty-four hours at a temperature of 60 degrees Fahrenheit.

After the primer is dry the surfacing coat or the "gun-glaze" can be applied. This coat is the "go-between" of the primer and enamel and literally forms the keystone of the arch of the whole job. The gunglaze or surfacer must adhere perfectly to the primer and form a perfect surface on which the enamel coats are applied later on. It corresponds to the rough stuff or sealer coats in a varnish finish job and for smooth metal the proper proportions are usually equal parts of surfacer and solvent by volumes. Where the surfaces are rough it may be used in the proportion of two parts of surfacer to one of solvent by volume.

#### *Putty Glazing Is Necessary*

Before applying the surfacing coat all of the rough spots, file marks, hammer marks and so forth should be filled in with putty glaze. Judgment should be used as to how much putty glazing has to be done, the idea of the operation is to secure a smooth surface for the application of the enamel. The putty glaze is applied with an ordinary flexible putty knife and it should be applied so that just enough of the putty is used to fill up the indentations. It is possible to thin putty glaze with turpentine to a consistency where it can be sprayed on. The putty glaze usually dries in from six to fifteen hours. And where the metal is very rough it is recommended to use three or more thin applications of putty glaze allowing the usual drying time between each application. If sufficient time is not given to dry these applications thick layers of putty will "surface dry" only resulting in bulges when the lacquer is sprayed on.

After the putty glaze is thoroughly dry it can be sandpapered to take out all rough spots made by the putty. The sandpaper can be used dry for this operation. After this operation the body should be wiped off with a rag to take off the putty dust.

The car is now ready for the surfacing coats and in preparing the surfacer the material should be strained exactly as was done with the primer. The surfacer is applied with the air gun in the same manner as the primer and the number of coats depends entirely on the condition of the body. A very good rubbing surface can be had by spraying four light coats of the surfacer on the putty coat. Usually this is done by spraying two coats a day, one in the forenoon and the other in the afternoon.

No sandpapering should be done between the surfacing coats but it is a good plan to spray on what is called a "guide" coat of yellow ochre and hour or so after the last coat has been sprayed. The purpose of this guide coat is to assist the operator when it comes to rubbing and will prevent him from going through spots to the metal or primer.

In next week's issue of MOTOR AGE the application of the enamel or lacquer coats will be discussed.



# A Big City Sales and Service Plan



Henry R. Levy, president Studebaker Sales Corporation of Chicago

*Intensive Analysis of Business and Residence Areas of Chicago Has Enabled Studebaker Sales Corporation to So Place Stores and Maintenance Shops That Business Was Increased 43 Per Cent in One Year.*

By HENRY R. LEVY

President Studebaker Sales Corporation of Chicago

**I**N more densely populated communities, where automobile dealers maintain branch salesrooms and service stations, profits have been reaped by understanding dealers who carry these branches to the people instead of suiting their own convenience.

Where shall a branch be opened? Where shall a service station unit be maintained? Where shall the headquarters of both services be maintained?

Too often, the answers to these questions are based on the price of ground rents or leases, the convenience of the dealer, a temporary burst of sales in some locality, or temporary demand for service in another locality.

In fact, the answer should be dictated by a study of the present and future of these localities with a view to continued service to the car owners themselves, regardless of rental costs or other considerations. If this means scattering branches and equipment over a wide territory, it must be made the most of. The car owner's convenience must be paramount.

Where, in the whole community, are the centers of residential population of a character that buys or can buy motor cars?

In what section is the greater growth of such communities?

Where are the centers of transient, or less permanent residence, or the hotel and office building districts?

The effect of the right answer to these three questions upon sales and satisfied service will be found profitable by any dealer, as we have found them profitable.

Realizing that to criticize a condition, without supplying a tested cure,

is pure theory, an example will be given that has been worked out by us in Chicago.

We maintain seven sales and service plants in Metropolitan Chicago. It is such solely because we have analyzed the demand in the district of Greater Chicago and have tried to fit our answer to the need.

First we identified the center of the transient occupancy, such as office building and hotel communities. We found this embraced the "Loop" of the city and ran south along Wabash and Michigan avenues for two miles.

What kind of service would car owners in such a district desire?

They wanted quick repair or adjustment work, embracing even major repairs. While they were in their offices during the day, or between two days; while stopping at hotels temporarily; where they could discuss rehabilitation of their car as a business matter, without bringing in the whole family—that was the time, that was the circumstance surrounding the work they wanted done.

So we located our central service station close to this district, and we put it adjoining a railroad, because we found many owners passing through Chicago who wanted a lacquer job or major repair done and the car shipped ahead to them.

In this central service station, which covers a whole block, we put equipment sufficient to rebuild entirely any model of our car since 1911. We installed the most complete lacquer plant outside any motor car or body building factory.

During the office hours of a day, or between days, we can handle almost

**I**N this article Mr. Levy tells how he planned the location of his extensive sales and service organization in Chicago which now embraces seven immense plants and a payroll of 468 employees. The fundamental principle upon which he worked was to place his sales and service conveniently to the centers of large and prosperous populations. It is a principle that the dealer or maintenance man, in large or small community, can well afford to observe. It enabled Mr. Levy to increase his business 43 per cent in one year.



any repair or overhaul job that is brought to us. Literally hundreds of such jobs are turned out weekly for men who, thereby, do not lose the service of their cars for a single day. There, every week, we handle quickly-done but thorough jobs of overhauling, adjustment or replenishment for transient motorists stopping at hotels.

### General Sales Problem

Then there was the general sales problem. Where to locate the main sales room, convenient to business men's offices, or to those who normally come to the business district for shopping? General inquiries, arising from no salesman's activity, but from outside source, come most often to the main office, often located, by those unfamiliar with the concern, through the telephone directory. The main office must be near the business district.

So we must have our 6-story main sales room not alone near that district, but near the main service station, for the same reason.

In Chicago there is almost a separate business community, like a city within another, around Cottage Grove Avenue and Sixty-third Street. Around it is a residence community of high character, and not far away another hotel section.

In the heart of this district we have located a sales and service station, at 6212 Cottage Grove avenue.

South of this center, and a little to the east, there has been a rapid growth in high class residences and apartments within the last few years. So we have a branch salesroom at 7434 Stony Island Avenue, in its center.

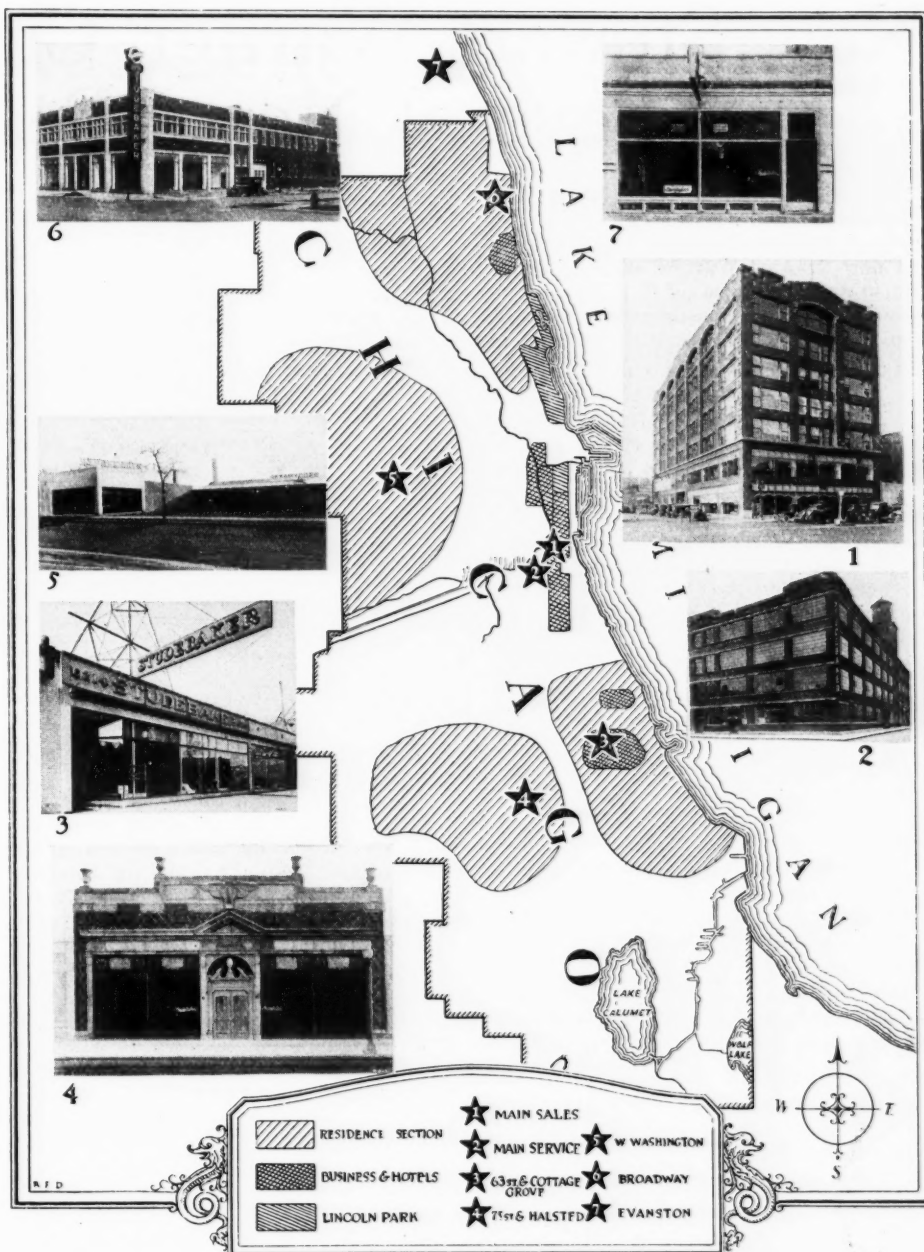
Wider boulevards, newly located industrial centers and opening of new highway arteries there have brought about a gigantic business and residential development in Chicago's southwestern section in recent years. Business is centralizing around Seventy-fifth and Halsted Streets. So we have a similar branch at 7605 South Halsted Street.

Until recently, there never has been any adequate provision for the great West Side of Chicago and the rich suburban districts beyond it. Now we have a branch at 4653 West Washington boulevard, in its center.

Just a few years ago, the better part of Chicago's "Gold Coast," or more prosperous North Side residential section, reached no farther than Wilson avenue, which is just six miles north of the "Loop."

But the character of building permits which were being taken out indicated this would be a rich community for another three miles north, reaching to the boundaries of "Exclusive Evanston." So our North Side branch was located in the center of that new district; at the time it was thought we had missed the mark on convenience, but time has justified our analysis, and a new "Motor Row" is reaching up to us, even now.

North of Chicago, the Lake Shore communities, homes of the wealthy and independent, reach for miles. For their



Map of the city of Chicago showing how seven Studebaker sales and service stations have been placed with reference to populations and business centers. Photographs of the various establishments are shown in the inserts.

accommodation, a branch has been established in Evanston.

But every family in Metropolitan Chicago can now go to see our product, or to have it demonstrated, close to that family's own home. Our branch manager is a member of each intra-urban business community. Service work is done close to the convenience of everyone, so it may be done more quickly, may be inspected while "in work" if the owner wishes to be in personal touch with the progress or nature of the work done and yet each branch has, at a few minutes' command, the entire equipment of the completely equipped central service station for special attention.

To do this has meant a substantial investment in properties. It has meant a payroll of 468 employees.

But to it we attribute in part the fact that our sales for the first quarter of this year exceeded those of the same quarter last year by 43 per cent.

To it we attribute in part the fact that 72.1 per cent of our sales are to former owners of our product.

# New Stewart-Warner Carbureter Has Several Novel Features

**S**EVERAL innovations in mixture proportion control and in control of accelerating fuel are embodied in the new Stewart-Warner carbureter, designed and developed by P. S. Tice of the Stewart-Warner Speedometer Corporation, Chicago.

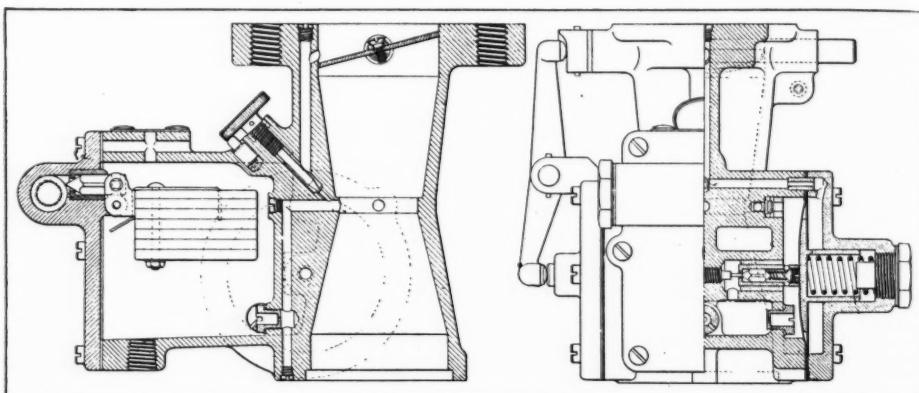
As will be seen in the sectional views, the single air passage is constructed to form a throat into which the fuel is discharged after passing through metering plugs or jets. All three jets are submerged and discharge at the periphery of the throat, thus keeping the throat clear of jets or standpipes and their supporting bosses. The absence of these latter contributes to a high pressure recovery or small drop across the carbureter.

Particular attention has been given in the design of this carbureter to securing fine spraying and consequent wide diffusion and high entrainment of fuel. This result is accomplished by the operation of the idling bypass directly upon the main fuel discharge passage, by the peripheral communication of the fuel outlets with the throat, and by the jog or step in the throat just above the fuel outlets. This latter is of particular value at wide open throttle at very low engine speeds.

The fundamental operating principle of this carbureter is such that the mixture proportion is constant or nearly so, and superimposed upon this general characteristic are design features that cause a richening at both ends of the load range.

## Throat Communication

The second and smaller of the two fixed jets communicates with the throat by way of a chamber, one wall of which is a flexible diaphragm. The outer side of the diaphragm is pressed upon by a plunger backed up by a spring, and is subjected to the pressures in the intake above the throttle valve. As this pressure changes the position of the diaphragm changes, thus altering the volume of the chamber through which the fuel passes on its way to the throat. Since the entrance to this chamber is by way of a small metering orifice and the outlet is large and free, inward motion of the diaphragm following a rise in intake pressure causes the ejection into the throat, at a high rate, of fuel in excess of that normally flowing, the amount of such fuel being proportional to the motion of the diaphragm, which in turn is related to the change in intake pressure. To keep the diaphragm chamber filled with liquid and thus enable it to repeat such discharge no matter how rapidly or frequently it is called upon to do so, a free check of flapper form is built into



*Section of the new Stewart-Warner carbureter, showing the arrangement of the parts and passages controlling both the steady running mixture proportion and the accelerating fuel*

its outlet passage to prevent the entrance of air from the throat on the "out" stroke of the diaphragm following a reduction in the intake pressure.

The third jet is in the form of a floating plug in the end of which is a hole normally closed by a small triangular spring-seated valve having an integral spigot or pin projecting through the hole. As the diaphragm is pushed inwardly by its spring plunger following a rise in the pressure in the intake, it in turn pushes the plug containing the valve ahead of it. Throughout the greater part of the diaphragm motion nothing is changed with respect to the plug and its valve, but the latter part of the motion presses the spigot against a stop and progressively opens the valve. This increases the total area of fuel jet passage between float chamber and throat and enriches the mixture correspondingly.

Since the diaphragm position, and therefore the extent of opening of the jet in the floating plug, is a function of the intake pressure, it is clear that the enrichment thus brought about is also dependent upon the pressure and therefore upon the relative air supply or relative air supply or relative load.

The entire setting of the carbureter is fixed by the specifications, with the single exception of the idling mixture, which is left adjustable.

In controlling the accelerating fuel the diaphragm is ordinarily utilized to handle about one-half of the total quantity of fuel needed for full acceleration, depending upon the engine to which it is applied. The rate at which this portion of the accelerating fuel is supplied closely approximates the rate of change of pressure in the intake. The remainder of the total accelerating fuel is applied by means of a positively actuated diaphragm pump arranged on the side of the carbureter opposite the pressure actuated diaphragm. A rocker lever transmits motion from a cam to the diaphragm

through a plunger, and the diaphragm is returned by an opposing spring-backed plunger, when the cam releases it. The cam is mounted on the throttle spindle and engages the lever to move the diaphragm only after the spindle has been rotated to open the throttle through 15 to 18 deg. of its possible 75 deg. total motion. Thus, when operating at usual engine speeds, the mechanical pump does not come into action until from about 80 to 65 per cent of the relative air is flowing. The accelerating fuel control system in both its pressure and its mechanically actuated portions, is very flexible and is capable of close fitting to the acceleration requirements for maximum responsiveness in any given case.

## Structure Simple and Rugged

Structurally the whole mechanism is simple and rugged. The diaphragms are of a hard rolled alloy that has been proven to have physical qualities that make it capable of long life in this service. None of the springs are delicate or sensitive as to strength; and none of the passages are so small or so located that they are liable to obstruction.

The float mechanism in its entirety is mounted by six machine screws; and fuel can reach the float valve only after passing through a screen of 100 mesh having a useful area of 2 sq. in. This screen is made up as a sleeve through which the fuel passes from the inside to the outside; and it thus retains all accumulated dirt which is withdrawn from the carbureter when the screen mounting is unscrewed. This latter is accomplished without disconnecting the fuel line.

The objectives aimed at in the design of this carbureter are stated to be: maintenance of the mixture proportion at the most economical value, except when the maximum output is demanded; and the supplying of accelerating fuel in such a manner and in such quantity as to give maximum responsiveness in all accelerations, large or small.



# Chandler Adds Sedan Body Model

*Appearance of Radiator Changed by Adding Three Vertical Bars. Body Lines Also Altered and Better Vision Provided for Passengers in Metropolitan Sedan*

A NEW vogue in radiator design following closely European standards has been set by the Chandler Motor Car Company in presenting its 1926 line of cars. But for addition of one new body model, slight changes in the "Metropolitan" sedan, several engine modifications and the new radiator style, the latest Chandler cars are substantially the same as the 1925 models, there being no change in prices or company policy.

## Three Vertical Radiator Strips

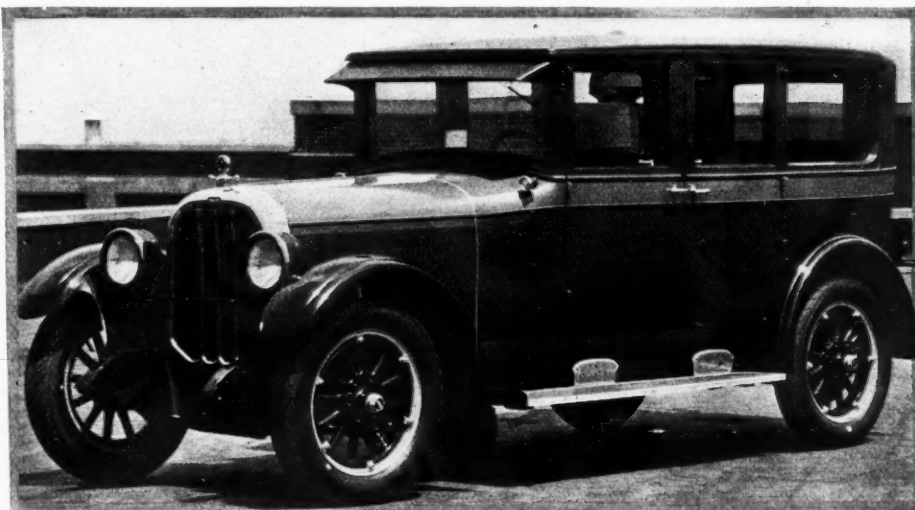
While the general contour of the new radiator is identical with the previous models, an individual and exclusive style is achieved by having three vertical strips spaced about 4 in. apart and at the front of the radiator. These triple bars which are of channel section are pressed out of the same stock and in the same operation forming the steel radiator shell, which including the vertical bars, is heavily nickel plated. A new name plate made of gun-metal having the letters in white enamel and mounted on a black background with a gold border extending around the design is now employed.

The new sedan seating seven lists at \$2195, replacing the former model at that price. The most noticeable change in appearance of the new sedan over the old model is the rounding of the corners on the rear quarter upper section, the employing of heavy beading accentuating the double belt effect, the use of a one-piece vision ventilating windshield and a new color scheme. The last mentioned is a Duco two-toned brown finish while a sage brush green is offered at no additional cost.

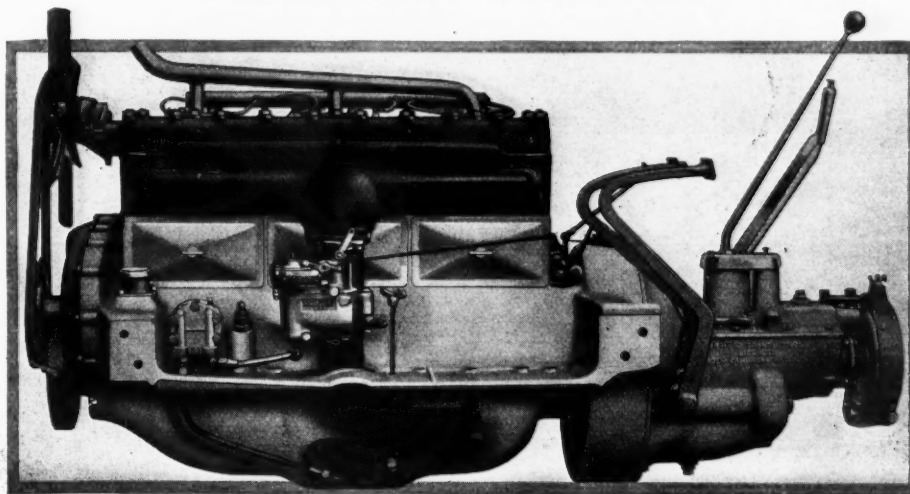
To allow greater vision and visibility for the passengers in the tonneau, changes have been made on the "Metropolitan" sedan. The landau bows formerly mounted on each side of the body at the rear have been eliminated and their place taken by windows of larger dimensions than previously used. Leather was formerly used to cover the rear quarter upper section which is now encased by a pressed steel stamping. Except for the addition of an automatic windshield cleaner on the seven passenger sedan the equipment is the same as on the model it supersedes.

## Refinements Are Made

In line with the company policy of not making announcements of changes in design at definite annual periods, the following refinements have been incorporated in the Chandler cars during the past several months. The ignition system which used to be mounted on a



*New Chandler seven-passenger sedan. The appearance of the body has been enhanced by moulding extending the full length of the car*



*Left side of the Chandler engine, showing the small flywheel at the front end. As will be noted the engine is very accessible*

separate platform and driven through a coupling from the rear of the generator is now a part of the latter forming a single unit. The position of the generator remains unchanged while the make of the unit is American Bosch as formerly.

Reduced engine vibration, smoother running and fuel economy have been attained by the addition of a small flywheel carried at the forward end of the crankshaft and a newly developed manifold.

Unusual design of the manifold now permits the exhaust gases to flow through a separate passage cast in the intake manifold and from there the gases are carried behind the centrally located car-

bureter to the muffler pipe. The exhaust manifold which is a separate casting is now ribbed on the top with five fins to assist cooling the gases and is secured to the intake manifold by two cap screws. On the previous engines, the mixture was pre-heated by a hot spot forming part of the intake which was bolted to the exhaust manifold. The exhaust pipe also instead of leaving the manifold at the middle of the engine was carried down the front of the powerplant just behind the radiator. Slight modifications in the clutch have reduced the overall length of the transmission housing by 2 in. while minor changes have been made in the transmission brake hook-up.

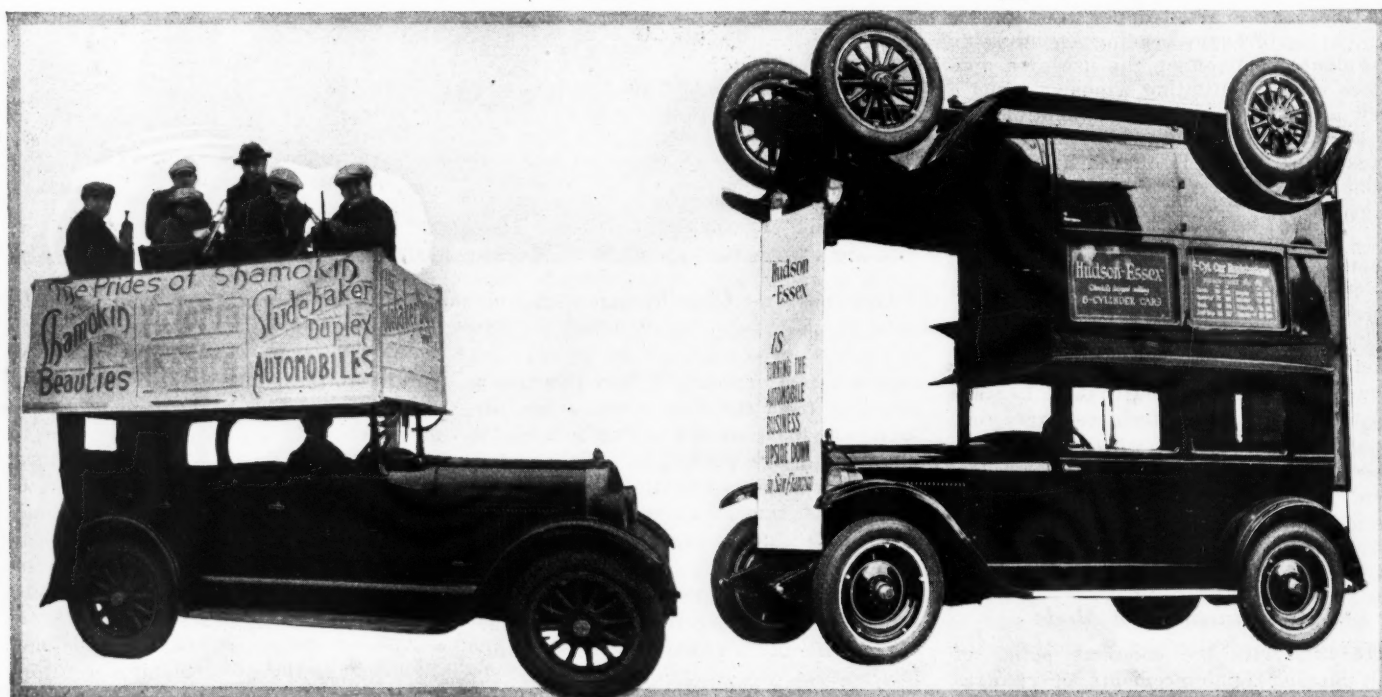


# MOTOR AGE'S PICTURE PAGES



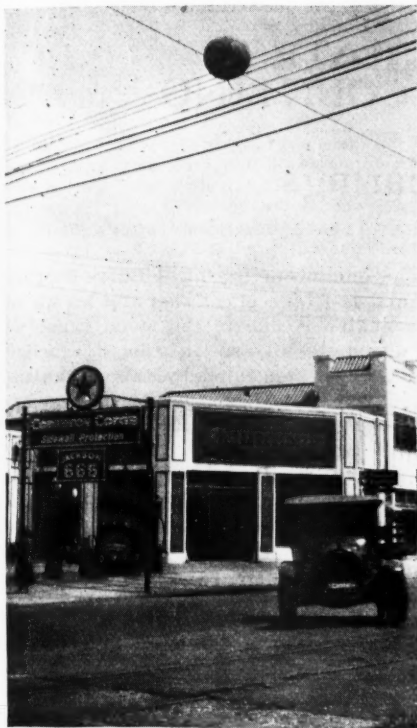
**TEA FOR THREE.** This young matron uses her Chandler Coach Imperial for more than transportation. When she takes the children for an outing and they get hungry, she simply spreads their picnic luncheon in the coach. The back of the front seat folds forward, making a convenient table.

**ON NON-STOP TRIP.** Lieut. Leigh Wade, one of the pilots in the American around-the-world flight, and Linton Wells, a newspaper writer, are shown in a Packard eight before starting on a non-stop drive from New York to Los Angeles.

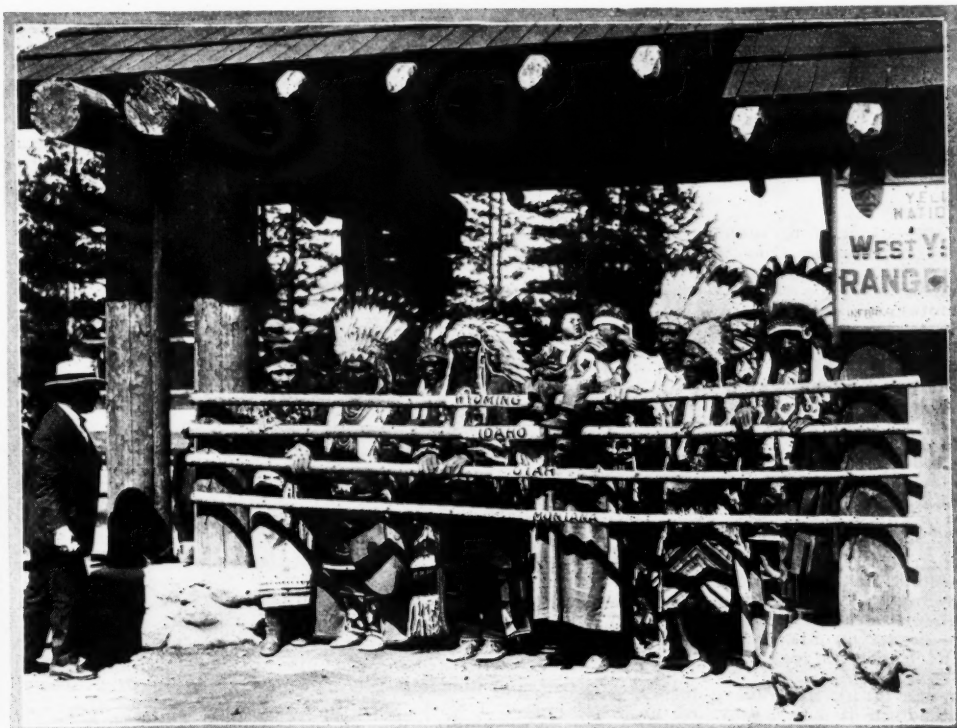


**SOMETHING TO MAKE 'EM LOOK.** Dealers are constantly devising new stunts to attract attention to automobiles. At left is a Studebaker Standard Six Duplex-Phaeton with a six-piece orchestra on top. This led a parade at Shamokin, Pa. At right, one Essex coach carries another upside down. This stunt was staged by H. O. Harrison Co. of San Francisco, and the big banner says: "Hudson-Essex is turning the automobile business upside down in San Francisco."

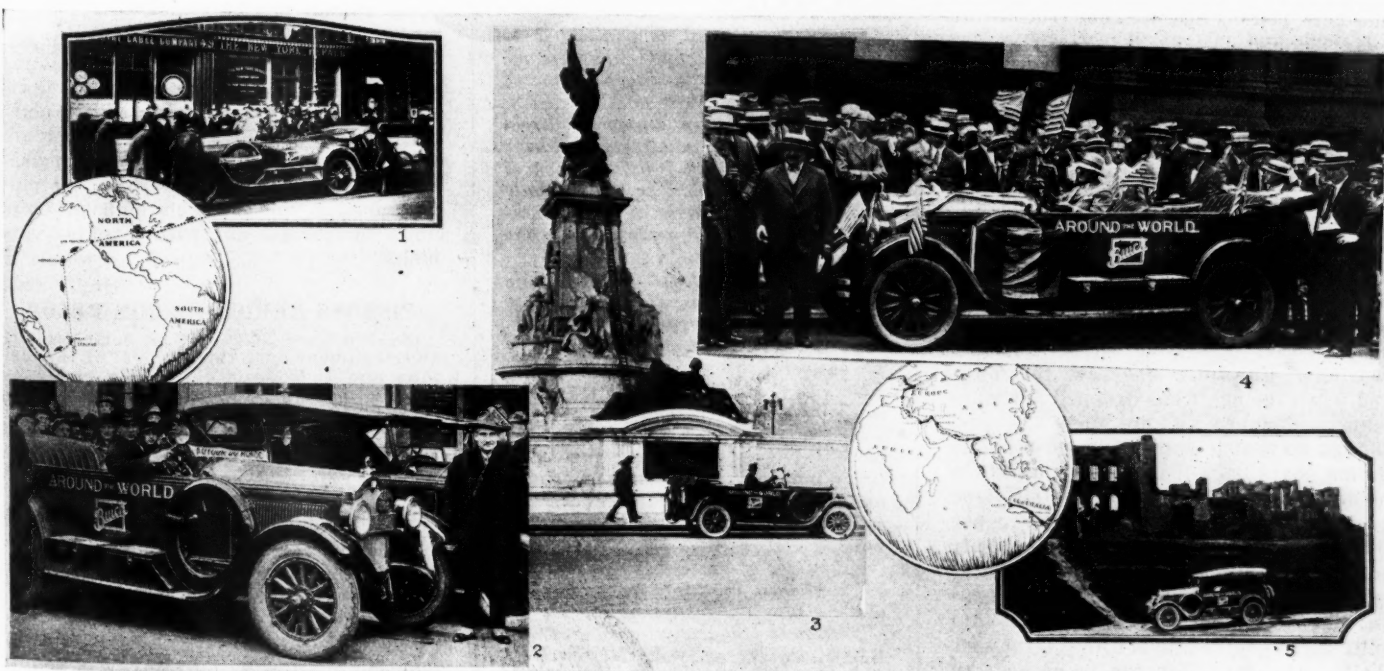
# OF AUTOMOTIVE INTEREST



**AERIAL ADVERTISING.** A balloon is floated over their New Orleans establishment by Gabriel Snubbers. People can't help looking up to this kind of publicity.



**INDIANS AWAIT OPENING OF YELLOWSTONE NATIONAL PARK.** A group of Black-foot Indians waiting behind the bars. The gate was opened with much ceremony, the governors of each state removing one of the bars. The park was then thrown open for the 53rd year. No doubt many automobile tourists will visit it this year.



**AUTOMOBILE COMPLETES GLOBE TOUR.** To demonstrate the world-wide availability of its service, the Buick company sent one of its Standard Six Touring models around the world. The company's agents in different sections took turns driving it. The views shown are as follows: 1—Paris office of the New York Herald; 2—Brussels, Belgium, with Brussels dealer in front; 3—Queen Victoria memorial outside Buckingham Palace, London; 4—The car as it drew up outside the Hotel Majestic, New York, Patrick Keating, at the wheel, completed the last lap from Flint, Mich.; 5—Kenilworth Castle, Warwick, England.



# The READERS' CLEARING HOUSE

Questions and Answers on Dealers' Problems  
 BUILDING - ELECTRICAL - FLAT RATES  
 SHOP - LEGAL - PAINT & TRIM - ACCOUNTING

## Splash More Oil to Save Main Bearings

Q.—About four months ago I tightened the connecting rods, main bearings, and installed new rings and ground the valves on a 23-54 Buick. After I did this the motor worked fine for about 1,000 miles, when it developed a knock. I then took the pan down again and examined the bearings, finding them all in first-class condition. The piston pins were all O-K, which, I forgot to mention, I had put in new before. However, the pistons were a little loose, having about .008 to .010 clearance at the top of the cylinder. I installed a new set of pistons of factory duplicates.

The cylinders were honed true to .010 oversize and the pistons were given .003 clearance. After reassembling motor the second time it still had the same knock. Connecting rods were aligned and new fiber timing gears installed. The car has been driven about 2,500 miles since and the knock is just the same. I will now try to explain the nature of the knock. When idling the engine doesn't sound bad although it has a sort of hollow knock which seems to be in pistons. The knock is worse when the car is on a constant speed of about 35 miles per hour and up. When pulling on pick up you can't hear a sound in engine but just as soon as you gain a constant speed it develops a clatter which is very loud, and not on one particular cylinder but on all six of them, and the higher the speed the louder the clatter.

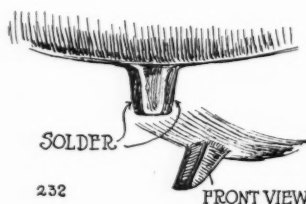
Retarding the spark will do away with the knock, but also takes the pep, of which the motor has plenty. I have had engine down since installing pistons and find both pistons and cylinder true within .002 inch and pistons fit perfectly. The valve cages are all setting O-K.—Weichert Auto Service, Ellis, Kas.

### May Be Caused by Bearing Looseness

It is probable that the noise is caused from looseness of the center rear bearing. You will find that the upper shell of this bearing is probably worn or burned slightly, allowing movement of the shaft up and down, even though the cap fits tight against the journal. To check on this point it is advisable to remove all of the cotter pins from all of the main bearings. Carefully unscrew the nuts, and when the shaft has dropped not more than one-eighth of an inch, or just enough so that it will not unmesh at the timing gears, jack it in position and then remove the bearing cap. With this done it will allow examination of the upper shell, and at this time very carefully examine the upper shell of the center rear bearing. If it shows signs of burning or poor contact it will necessitate pulling the engine and refitting the upper shells. The fact that the main bearing caps are tight does not necessarily mean that the shaft is properly bedded in the bearing, as in many cases it is possible for the upper shell to wear faster than the lower and for one upper shell to wear faster than its neighbor, in which

case the shaft becomes unsupported at that point.

Q.—I have another Buick, a 22-45 model,



Widening oil dipper with solder

with exactly the same knock. I have installed two sets of pistons in this car, but the first set I installed were crown head with centered piston pin. When I put these in I honed the cylinders to fit the pistons very tight, that is, just so that I could push them through. When I assembled this engine and started it it sounded fine—exceptionally good for valve-in-head engine. After the owner had driven the car about 300 miles he stuck motor and scored the cylinders so I honed out the block again and put in .015 oversize pistons of same type and gave them .003 clearance and car has had same knock,

which I have described, after about 50 miles.

The opinion of the local Buick factory branch is to the effect that the knock in this engine is due to the same cause as produced the noise in the 23 model. It has been suggested by this organization that to provide better lubrication you remove the crankcase sub-base trough covers and that you also widen the dippers on the connecting rods, one-eighth inch, that is, one-sixteenth inch on each side, by soldering (Fig. 232).

### HOLDING THE OIL IN WITH VARNISH

Q.—We are having trouble with a Fordson tractor which flings oil from the pulley attachment. When this pulley was first installed and the tractor and pulley were new the pulley was not used to any great extent until it began to fling oil. We have removed the pulley several times and examined everything, also put in new felt. It would be all right for a little while and then would start to fling oil again. We know of other tractors that have been used more than this one which have never flung any oil. Carlos Farris, Tilford, Ky.

One possibility is that when the power attachment is used the tractor is not on level ground and the right side is lower than the left. This will tend to cause oil from the transmission to work out. Carrying the oil level too high in the transmission will also tend to produce leakage. Another possibility is that the casting which holds the bearing is upside down, so that the drain hole is on top. Another possibility is that the castings are somewhat porous and one recommendation is to remove the pulley and the pulley housing and varnish both of these units inside and out with machine varnish.

### PISTONS REMOVED FROM BELOW

Q.—We have been having some trouble and argument over the removal of the pistons and rods from the Essex six. Are these assemblies supposed to come down in the regular manner on all models of this car, or only on some. Numbers two and five seem to be the joke on some. —Edgar, D. Best, 1533 S. 3rd Street Charlestown, Ill.

We have been advised from official sources that the pistons and rods are removable from below. In some rare cases the cylinder block casting is not uniform, so there is not sufficient space between the crankshaft and the sides of the case to allow withdrawal from below. In these rare cases it is necessary to push the piston up toward the top as far as possible, remove the piston pin and then withdraw the rod from below. Always heat the piston slightly before removing the pin.

## The Readers' Clearing House

**T**HIS department is conducted to assist dealers and maintenance station executives in the solution of their problems.

All questions are answered direct by letter, so the name and address should be given in full. This saves waiting for the answer to be published, which sometimes occurs several weeks late, depending upon the space available.

Readers' names will not be published with articles, if a request to this effect is received with the letter. Inquiries not of general interest will be answered by personal letter only. Emergency questions will be replied to by letter or telegram.

Also state whether a permanent file of MOTOR AGE is kept, for many times inquiries of an identical nature have been made and these are answered by reference to previous issues.

Addresses of business firms will not be published in this department but will be supplied by letter.

Technical questions answered by B. M. Ikert, and A. H. Packer; Legal, by Wellington Gustin; Paint, by G. King Franklin; Architectural, by Tom Wilder; Tires, by a practical tire man; General Business questions, by MOTOR AGE organization in conference.



# Planning Your New Building

By TOM WILDER



## A Large Building With Limited Frontage

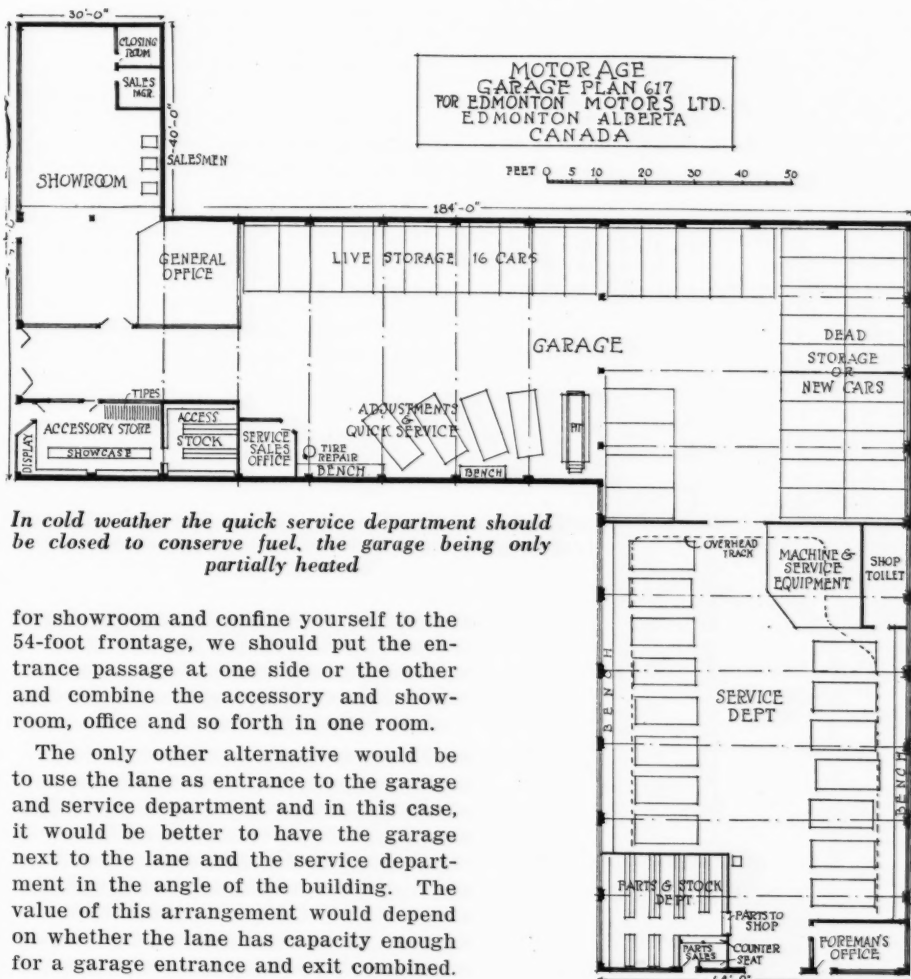
Q—We are enclosing a rough sketch of the approximate dimensions and size of a garage we are expecting to have built, and would like to work out several plans of what you consider the best way of arranging the layout, and return to us as early as possible. The nature of our business is exclusive Chevrolet franchise for Edmonton, and the number of Chevrolet cars operating in our territory approximately eight hundred. The lane indicated in the sketch is an ordinary lane, twenty feet wide. We will be pleased if you will draw up plans of both with and without the thirty by forty foot lot adjoining the property. The frontage faces on one of the principle streets of the city, and I think it would be advisable for us to take on the thirty by forty foot lot adjoining. —Edmonton Motors, Ltd., Edmonton, Alberta, Canada.

Your request for several layouts so that you could see which one you like best is quite out of the question, since there are so many waiting for plans that it would be quite unreasonable for us to make several for you and keep the rest waiting. Besides this, the layout which we have made works out so well that we doubt very much if we could make one that could be improved.

We think you would be very wise to add the forty feet to your frontage, using this space for showroom at one side of the car entrance, while at the other side you can have an accessory store. Back of these departments is the garage with space for quick service and adjustments at one side just behind the service sales office. As cars come in for service they are inspected by the service salesman in charge and sent either to the quick service department or to the main repair shop at the other end of the building. In case the repair shop is full, the car can be stored in the garage and called for when needed.

The retail parts sales department is in a little corner of the stockroom facing on the lane. There the stock keeper can take care of sales and also supply the shop with necessary parts.

In the angle of the building well secluded and out of harm's way there is a good space for new car shortage. While both sides of the service department are well supplied with windows and lighting space, it would improve the center of this section very much to install several good sized skylights or a continuous transom extending the full length of this section. The quick service department should also be supplied with skylights, as here there is no chance for outside windows. In case you do not use the 40-foot frontage



*In cold weather the quick service department should be closed to conserve fuel, the garage being only partially heated*

for showroom and confine yourself to the 54-foot frontage, we should put the entrance passage at one side or the other and combine the accessory and showroom, office and so forth in one room.

The only other alternative would be to use the lane as entrance to the garage and service department and in this case, it would be better to have the garage next to the lane and the service department in the angle of the building. The value of this arrangement would depend on whether the lane has capacity enough for a garage entrance and exit combined.

## LEGAL QUESTIONS ANSWERED

By WELLINGTON GUSTIN  
of the Chicago Bar

Q.—Does Tennessee allow a lien for work done on automobiles?

Section No. 3592a-5 of the Code of Tennessee gives you a lien for "any repairs or improvements made, or fixtures or machinery furnished" on any vehicle. The law is broad enough to include tires furnished. This lien is good for one year after "the work is finished or repairs made or materials furnished" and until the decision of any suit that may be brought within that time for the debt. This lien is good against the automobile and the improvements thereon, provided the automobile has not been transferred in the meantime to a purchaser in good faith and without notice.

You see no recording of your claim is necessary to keep your lien alive during the period of one year as in most

states. However, to prevent a sale in good faith to an innocent purchaser which would defeat your lien, you should have your lien recorded immediately after it is created. Recording is for the purpose of giving notice to all of your claim.

Your lien is subordinate to the claim of a seller of the car, retaining the title until fully paid for, so say the courts in your state.

You may send out and get the repaired cars, provided you do so in a legal manner.

The law allows levy of execution on the lien property and this is safer where an attempt to evade the lien is feared; otherwise a simple suit is the least expensive method.



# Clearing Up Electrical

EDITED BY A. H. PACKER

## Tests O. K. But Generator Puts Out Only 4 Amps.

Q—We have a Remy generator from a 1918 Oakland which formerly generated 20 amperes until the thermostat cut in and then generated about 10 amperes. Recently it will only generate about three or four amperes, either cold or hot. We have dressed up the cutout points as they were somewhat burnt. We tried separate wires from cutout to battery with a separate ammeter in the circuit, so as to eliminate the regular wiring.

We also tried eliminating the cutout thinking the trouble might be there. As none of these experiments did any good we took the generator apart and cleaned it out. The commutator was in fine shape, well undercut and showed no burnt segments. We then tested the armature with one cell of a battery which showed about 18 amperes from one segment to the next all the way around. It would show 20 amperes on short circuiting the test points.

We figured that if any two coils or segments were shorted, you would get a higher reading than 18 amperes and if open a lower reading. A 110 volt test with a light showed no ground. The field coils were also clear of ground and with one cell of a battery showed two amperes through both fields and from the middle connection through either coil showed four amperes. We drew a platinum file between the points of thermostat a few times, as much as we dared, to clean them up. We taped up all brush leads where they were bare but none of these seemed to be causing the trouble. We did not try changing the position of the third brush as it had not been moved from the time when the generator was operating properly. We are enclosing a sketch showing the internal circuits of this machine.—Anaheim Reader.

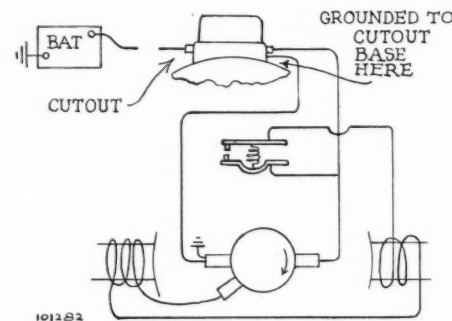
### Nothing Wrong With Internal Wiring

We are reproducing two sketches, one of which is the one you sent to us. We can find nothing wrong with this internal wiring. While you cleaned up the contact points of the thermostat you did not eliminate the thermostat entirely from the circuit. You could do this by connecting the lead from the field which normally goes to the thermostat directly to the insulated main brush. This would be a way of making sure that the trouble is not in the thermostat. Another test you might make which you did not mention is to use the 110 volt lamp test to see if any of the brush holders are grounded, that is, omitting the main brush holder which is supposed to be grounded. You might also check the thermostat to see if it is grounded. You have certainly done nearly everything possible.

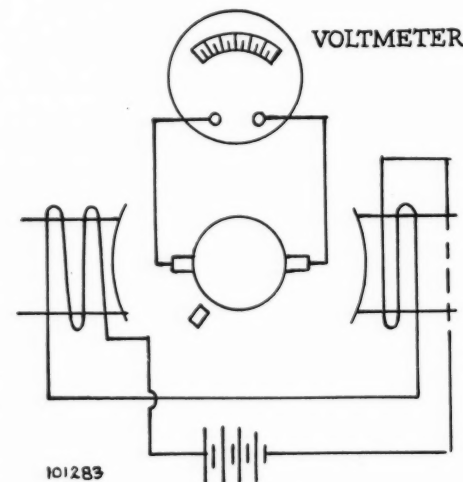
It occurs to us that there may be trouble in the armature which only shows up when the armature is rotating, when centrifugal force which tends to throw the wires out, makes them short or ground. To detect this you might make a test like the one shown in the other sketch which we are also publishing. To make this test you can connect

a dry cell to the field, disconnecting the shunt field from the third brush and also from the thermostat. If you wish to you may connect several dry cells or several storage cells. Then run the generator on a test bench and read the voltage which should vary in exact proportion to the speed, for the magnetic field is constant as it is supplied by the battery.

If you find that the voltage increases



101282  
Reader's test circuits—they seem O. K.



101283  
Running test for faulty armature

in proportion to the speed but at some point suddenly becomes unsteady, and the voltmeter needle drops back then you will know that something has happened in the armature. As a last resort you might try changing the position of the third brush just to see what will happen although of course it should not be necessary if the present position is one in which operation was formerly O. K. We assume that the battery is O. K. and that it operates the starter. If so, it should be all right and take current from the generator. If one cell of the battery should be shorted however, it would maintain a low voltage at the generator and probably reduce the charging current. This is a very interesting case and would like to hear from you if you have a chance to make the voltmeter test we have indicated.

## Come and Go Interrupter Trouble

Q—We have a 1924 Star touring car and of late it has been stopping very suddenly because of no spark in the distributor. The starter cranks the engine but the engine will not start until the interrupter points have been wiped off with a cloth and a slight adjustment made. In addition to working on this car ourselves, we have had it in two electrical service stations where the men are supposed to be competent on this sort of work. They have told us that the points of the distributor do not need replacing and are working satisfactorily, but it seems they can only effect temporary repair because after the car has been driven a while the old trouble returns.—Herbert J. Kersten, 511 N. Lee Street, Bloomington, Ill.

This appears to be a condition of defective interrupter contacts. These contacts are made of Tungsten and when this material is rolled it occasionally has impurities in it, these being in the nature of slag. When such interrupter contacts are encountered it is possible to file the surface and get perfect operation for a while, then the metal burns down to the point where the stony substance or slag makes contact and no current flows.

### How to Test for Trouble

If the points are disturbed slightly they may again strike metal to metal and the operation is O. K. until the old trouble recurs. You can easily test to see whether this is the condition or not the next time the trouble happens. When the engine fails to start look at the ammeter and see if it shows discharge when the ignition switch is turned on and the engine is turned over. If it does not, remove the distributor cap and turn the engine until you can see that the interrupter points are touching. Then look at the ammeter again and see if it shows discharge.

If it again does not show discharge, take a piece of wire and touch one end of it to the interrupter terminal and the other end to the frame of the engine. If the trouble is due to the points not making electrical contact you should get a circuit and the ammeter should show discharge of about five amperes. You can then make another test by touching the wire from one point to the other and you can also press the interrupter contacts more tightly together and move them slightly to see if this makes the ammeter show discharge. If the trouble is at this point in the circuit any one of these tests will be indicated by the ammeter reading, but if you cannot get current to flow then test from one of the coil terminals to the frame of the engine, working back with a test light or with a piece of wire making contact from the ignition circuit to the frame of the car until you find the point where you get current.



# Trouble With Bill Fixit

EDITED BY A. H. PACKER



## How a Growler Finds Short Circuits

Q.—I received your letter of May 11th in regard to the Remy generator on an Oakland car. In this letter you suggested testing the armature by running the machine with battery current flowing through the field winding, and taking voltage readings at the main brushes. I had previously tested this generator armature by using a dry cell and an ammeter, but found no trouble according to this test.

As I suspected the armature was at fault, I took it to another shop where they have a growler and it showed a strong attraction in two places. Can you explain why my test would not show this trouble? Would also like to have you explain the action of a growler and how it causes magnetic attraction when the winding is shorted.—Anaheim Reader.

In your test the ammeter would indicate 20 amperes when you held the test points together and would indicate 18 amperes on a normal coil. The difference was so slight that you may have had a slight short circuit which would cause trouble when the armature was running and yet would not be of low enough resistance to enable you to tell the difference. That is, it might have been reading 18.1 instead of 18 amperes and you could not tell whether there was trouble existing or not. Another possibility is that the short circuit does not actually exist, when the armature is perfectly still, but when running, or when being vibrated slightly by the growler, the short circuit will exist and show up on a test of this kind.

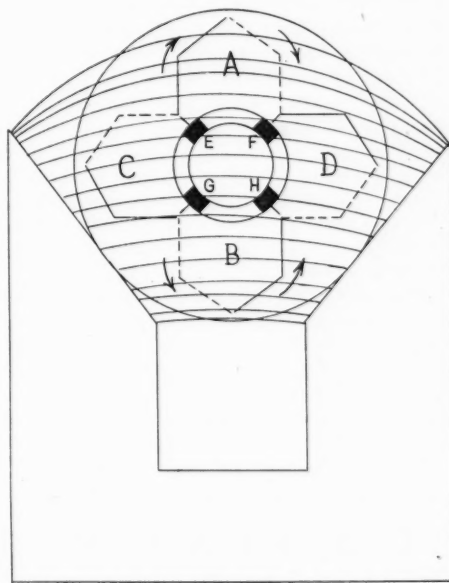
### Armature Running Test Probably Would Have Located Trouble

We believe you would also have found the trouble if you had been able to make the armature running test which we indicated. In the illustration we are showing the way a growler works and the reason for a shorted coil showing magnetic attraction. Instead of a regular armature, we have shown a very simple one with 4 segments and only 4 coils, the coils being A-B-C and D and the segments being E-F-G and H. The windings on the growler would produce magnetism which would first go from left to right and then from right to left, reversing 120 times a second with 60 cycle current. We will assume that at a certain instant of reversal that voltages are generated in coils A and B in the direction shown by the arrows. Coil A would be trying to send current around to the right and coil B would be trying to send current around to the left and these two voltages would neutralize so that practically no current would flow.

There would probably be some voltage generated in coils C and D and in any other coils that might be in the armature, but we would find in all cases that these voltages would practically cancel out so that no appreciable current would flow in the armature winding when the

armature is in good condition. Suppose however, that there should be short circuit between commutator segments E and F at the bottom of coil A. This would allow the voltage generated in coil A to send current around through the winding of that particular coil. In similar manner, it would allow coil B to send current through coil D, then across from commutator bar F to E and back through coil C to coil B again.

In this way we would have two coils with current flowing in them, but the current would be stronger in coil A because the resistance is lower, while coil B had to send its current through all the rest of the winding with the exception of one coil. We know that where current flows through a coil it has a magnetic effect and this will show up as a



Coils produced by growler magnetism

local magnetic pole at the center of the defective coil. In some cases the winding varies so that a single short circuit will produce two magnetic poles on the armature. This would be true in a wave winding, whereas the one we have shown is a lap winding. Believe that from this however, you will get the general idea and understand why a short circuit produces a magnetic effect while a good armature shows no appreciable magnetism.

Does armature testing "get your goat"? The first article on page 26 tells what the Anaheim Reader was up against and the first article on page 27 tells what he found and how.

## Special Machine for C. P. Charging

Q.—I have a motor generator set for charging batteries. I would like to know if it is possible to get a voltage regulator for this set so as to make it a constant potential charging outfit.—LaSalle.

A motor generator set designed to charge a number of batteries in series is not properly designed to operate as a constant potential charging machine. A set of this sort may be designed to give out 10 or 15 amperes at a voltage of from 75 to 100, while the constant potential machine is designed to give out a high current of 100 to 150 amperes or more at low voltages, such as 7 to 15. Accordingly, the parts are not the right size, and, in the high current machine, the armature conductors, brushes and all connections which carry the charging current would have to be very heavy. Consequently the mere addition of a voltage regulator would not make the machine suitable for this purpose.

### MOTOR FOR IGNITION TESTER

Q.—How can I vary the speed of a horn motor which I wish to use for driving the circuit breaker of a testing set which will be used in testing ignition coils and magneto armatures.—West Coast Reader.

Horn motors are series wound and the speed cannot be controlled very accurately. You can put a coil wire rheostat in series with the motor and while this will make it go slower it will also cut down the torque. You may find that this will work all right or you may find that when you try to make the interrupter run slower that it will occasionally stop. You might try connecting the horn motor field in parallel with the armature and putting a fairly high resistance rheostat in the field circuit only. Weakening the shunt field will make the motor speed up. On the other hand you might first find it necessary to rewind the field with finer wire.

Q.—In testing a magneto armature with a circuit breaker and six volt storage battery should the current flowing through the primary winding be limited to a certain number of amperes or should the primary winding be allowed to take whatever it will carry under a pressure of 6 volts.

We would suggest letting it take as much current as it will except that a test should not be run long enough to permit the armature to get hot. If it draws five or six amperes with the contact points together, it will be about the equivalent of testing an ignition coil. If it draws 10 or 12 amperes with points touching it may cause some sparking at your interrupter, and a test of this sort should not be continued very long. You will accordingly have to gauge your test in accordance with the current taken and the tendency for the armature winding to heat up. It is essential to provide a spark gap of about  $\frac{1}{16}$  inch before starting it or you will strain the insulation of the secondary winding.





# Motor Age's Flat Rate Forum

EDITED BY B. M. IKERT

## Automobile Owners Like Flat Rate Charge System

### Club Endorses Flat Rate

Worcester, Mass.

To the Editor of Motor Age:

In our contact with service through many members we have come to the conclusion that the theory of a standardized flat rate charge for repairs, overhauling, etc., is altogether practical, sound and just in every way and at an early date this club is going to pass a formal resolution endorsing and approving of its general adoption.

Only a short time ago the president of this club, passing through Jacksonville, Fla., had occasion to have a small but important piece of repair work done, and upon completion and being informed of the charge told the service man "that is exactly the same price as I paid for the same job in Worcester, Mass.," and the reply was, "Yes; we presume your Worcester service man had adopted the flat rate charge."

Your advocacy of this has been mentioned at our directors' meeting, and while no formal expression has been made as yet we are prompted to again express our appreciation of the fine work you are doing and compliment you upon the advocacy of a measure which means so much to the owners of automobiles.

If it be convenient for you will you tell us how many and which of the automobile manufacturers through their sales and service have adopted the practice of a flat rate charge.

We are going to have a special article

in our local papers concerning this very soon and shall endeavor, of course, to give you full credit for your part in the matter.—Bancroft Automobile Club, Inc.

### Franklin and Reo Prices

To The Editor of Motor Age:

In your issue of April 30 your flat rate chart has a notation stating "Franklin and Reo prices include labor and material." We would like to have a fuller explanation of this. For instance, a valve grinding job on a Franklin E-14, \$20.42 could not include new valves. Operation E-63, taken on a Franklin is listed \$154.25. What parts should this include? We do not think that the prices will include the parts needed on the ordinary Franklin. What parts would you suggest furnishing for this price? How many hours does this price allow? Kindly send us another copy of the April 30 Motor Age—Middagh Motor.

The operation E-63 concerns the overhauling of the engine and this means grinding the block to .015 in. oversize, new pistons, wrist pins, new timing chain, new oil reservoir screen, new ignition points all new gaskets and whatever small parts are needed in overhauling the carbureter.

The operation does not include new main bearings or valves as you will note that it is clearly stated that the bearings are to be taken up only and the valves reground. You will also notice that the operation E-14 as given in the Motor Age Flat Rate Manual reads as follows: "Clean carbon, grind valves and E-13,"

the latter being the operation number for tuning the engine.

In both the Franklin and Reo prices material is included. For example in the operation E-59 "Fit all pistons, cylinders out" you will notice that the price for this operation on the Franklin 10-C is \$44.10. Now if you compare this price with that for the same job on other cars you will find the Franklin price far above them, but that is because the Franklin price includes the pistons, rings and wrist pins.

The same is true of other flat rate operations for Franklin where the price seems high in comparison to the price of the same operations on other makes of cars. It is quite difficult to give the time necessary for the overhauling operation E-63 since this includes the material and it is impossible to divide the price of \$154.25 by \$1.50 per hour and thereby get the approximate number of hours for the job. Probably 100 hours comes pretty close to it.

### Readers Like Flat Rate Manual

MOTOR AGE has received numerous letters from its readers testifying their appreciation of the utility and practicability of the Flat Rate Manual, published in the April 30 issue. Likewise the discussions which have appeared on this page have proven of interest to the trade, judging from the letters that have been received. MOTOR AGE welcomes letters on flat rate problems. So write in and let us have your views on this important question.

## MOTOR AGE'S FLAT RATE FORUM

No. 20

### FLAT RATE PRICES FOR BRAKE LINING OPERATIONS\*

Make and Model	Service	Emergency	Make and Model	Service	Emergency
Auburn 6-39 .....	\$11.50	\$19.50	Moon .....	11.25	18.75
Bulek "4" 4-Wh. Br. ....	19.00	23.00	Nash "4"—4-Wh. Br. ....	14.00	19.50
Bulek "6" 4-Wh. Br. ....	21.50	26.25	Nash "6"—4-Wh. Br. ....	15.00	22.00
Cadillac V-63 4-Wh. Br. ....	25.00	33.00	Oakland—4-Wh. Br. ....	16.50	20.50
Chandler .....	11.75	19.00	Oldsmobile "30" .....	8.70	12.00
Chevrolet FB .....	10.00	16.50	Overland .....	8.50	12.50
Chrysler .....	17.50	20.25	Packard "6"—"8"—4-Wh. Br. ....	12.50	23.50
Cleveland 43 .....	21.00	25.00	Paige "6-66" .....	12.50	21.00
Dodge Bros. ....	11.25	25.00	Peerless .....	12.50	22.75
Durant "4" .....	10.50	16.75	Pierce-Arrow .....	16.75	25.59
Durant "6" .....	11.25	18.50	Reo .....	13.50	22.75
Essex "6" .....	10.50	17.25	Rickenbacker 4-Wh. Br. ....	19.75	23.75
Flint .....	11.00	18.25	Star .....	8.25	12.75
Franklin .....	10.00	15.00	Stearns-Knight .....	13.50	21.25
Haynes .....	12.75	17.00	Studebaker Stand. ....	10.50	17.00
Hudson .....	13.25	22.50	Studebaker Big and Special "6" .....	11.50	18.50
Hupmobile .....	9.75	15.50	Stutz 695 .....	13.25	23.50
Jewett .....	11.00	14.75	Velle .....	10.75	17.25
Jordan "M" .....	10.50	17.75	Willis St. Claire .....	11.25	18.00
Lincoln .....	17.75	27.50	Willys Knight .....	12.50	18.75
Marmion .....	13.00	20.50			

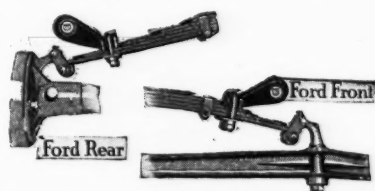
\*Includes material.

# THE MARKET'S NEW OFFERINGS

## Accessories—Equipment—Supplies

### Harve Stabilizer for Fords

A NEW model Harve stabilizer for Fords has been developed by the Continental Co., Springfield, O. The design of the special Ford type is much the same as the regular model, controlling spring action through the basic principle of inertia of an offset weight. The following specific advantages in the Ford model are pointed out by the Continental Company: No part of the car is tampered with in making installation; Harves do not add auxiliary springs to the car in an attempt to absorb shock and check rebound; elimination of side-sway; excessive spring action, both shock and rebound, is controlled without destroying the natural flexibility of the car springs by tying the body of the car down to the axle.



Harve Stabilizer for Fords

### Sell the Homefolk Before They Go

There are two opportunities to catch business from the summer automobile tourist.

One is to sell him when he is stopping in or passing through your town. The other is to sell him BEFORE he starts out on the trip.

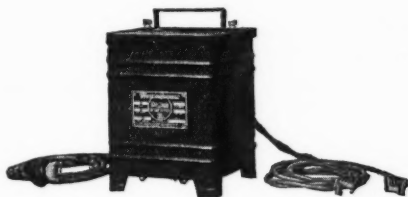
The dealer's first consideration is to supply the local resident who contemplates a long motor tour. He means more than the transient because the local resident will return and possibly buy again.

Now is the time to watch newspapers and be otherwise alert to find out what homefolk are going on automobile trips. Plenty of information at the store as to roads and routes, hotels and camps will offer a form of "free service" that will make contacts for selling opportunity.

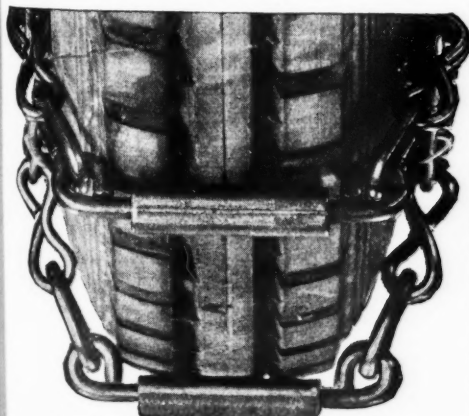
Bring the buyer to the store.

### New Rectigon Charger

The Westinghouse Electric & Manufacturing Company has developed a new Rectigon battery charger which will handle any A or B storage battery used for radio work as well as any three to six cell automobile battery. The charg-



ing rate is two amperes except when B batteries are being charged. The transformer winding which supplies the current to the battery is entirely insulated from the winding which is connected to the A. C. source of power. The use of the insulated winding gives added safety in charging a battery which is connected to a radio set.



Hoff Tire Chain showing cross member

### Hoff Tire Chains

THE Hoff Metal Products Company, 70 East 45th Street, New York, contributes a departure to the accessory market in its Hoff tire chains and cross members. The cross members of this tire chain, instead of being in the form of the usual links, are in the nature of rotatable triangular tubes which it is claimed offer a number of distinctive advantages. In addition to embodying good features of the older style chain it is said the Hoff product obtains better traction, preventing side-slip and skidding under any road condition. The company further recommends its chain as one that will not break or pound fenders and not injure tires.

It is said to be easily taken on and off and that worn cross members can be readily replaced. The Hoff cross members may be used in a chain made on the cross-chain plan. Replacements of Hoff cross members for cross-chains can be made as the old cross-chains wear out. Prices for Hoff chains with Hoff cross members range from \$4.75 per pair to \$10.25. Cross member prices range from \$9 up for lots of 100. The company will furnish other prices and details.

### Puncture Sealing Tubes

EMPLOYING a principle which produces a high compression area upon the rubber of the inside, triple-thick treadside surface of the tube punctures are automatically and effectually sealed in the Polson-McWade Puncture-Sealing Inner Tubes, according to the claims of the makers, the Polson Rubber Co., 1783 E. 11th St., Cleveland, O. A nail, wire or other object entering the tube is immediately surrounded by compressed rubber and there is no escapement of air. As the puncturing object is withdrawn it is said surplus rubber flows into the hole and seals it as though vulcanized. The tube is not sold as "puncture proof," the manufacturers stressing its sealing feature.

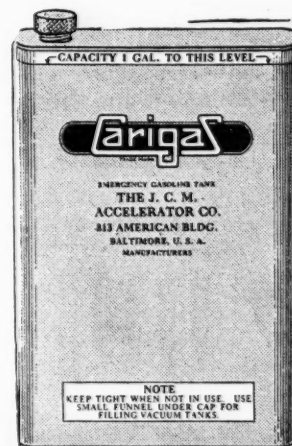
It is claimed by the manufacturers that the tube is made of 93 per cent rubber of the highest grade, the average tensile strength being 2500 pounds to the square inch in the new tube. The tensile strength increases with age. It is claimed further that the compound from which this tube is constructed gives exceptionally long life to the unit. Repairs may be readily accomplished and the tube is easily installed.



Puncture Sealing Tube

### Carigas Emergency Tank

THE Carigas Emergency Gasoline Tank is manufactured by the J. C. M. Accelerator Co., 813 American Bldg., Baltimore, Md. This is a container of one gallon capacity made to fit under the seat of any stock car. It uses a brass machine threaded cap and a funnel for filling vacuum systems and carries a guarantee against leakage or evaporation. The Carigas tank is 2½ in. thick, 8 in. wide and 13 in. high. The list price is \$1.25.



Carigas Emergency Tank



# GETTING MORE OUT of the SHOP

## Chausse Portable Furnace

A portable furnace for use in melting lead, babbitt, cyanide and other similar surfaces, has recently been produced by the Chausse Oil Burner Co., Elkhart, Ind. This machine as illustrated, is a combination of a Chausse oil burning torch equipment with a retort and mounted on a framework with wheels.

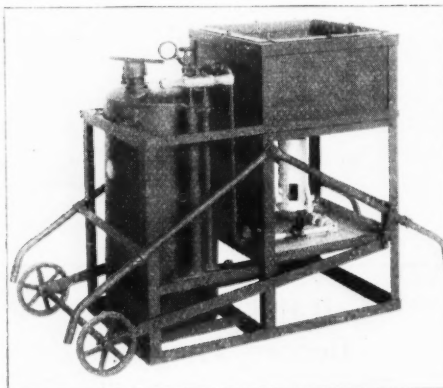
This Chausse forge weighs about 160 lbs. empty, and its overall dimensions are as follows: width 20 in., length 36 in., and height 33 in. The heating chamber is 14 in. x 14 in. x 16 in. high and is lined with fire brick with the flame entrance at the bottom. The kerosene tank holds 12 gal. which is sufficient for 12 hours operation at maximum temperature. The burners, consuming 1 gal. per hour, will deliver sufficient heat to melt 200 lbs. of lead in from 20 to 30 min. from a cold start. The maximum temperature generated by the burners is 1,800 deg., and any reduction in the amount of heat generated, will of course, decrease the fuel consumption. Pressure on the tank is maintained between 10 and 20 lbs. by one Chausse hand pump.

An interesting feature of this machine is the movement of the wheels, so that when stationary the forge sets horizontally on its base. By lifting on the handles at the rear, the side opposite the wheels, the wheels are lowered, and the machine can be moved from place to place without tilting. When it is set down, the wheels rise.

The features of this machine meet a requirement in a number of industries. It was designed as a lead and babbitt melter for municipal water works and for babbitting engine bearings. It has been found satisfactory for melting cyanide for case hardening, for boiling water, for heating pipe to be bended, for expanding gears or collars and wherever an oil burning forge can be used to produce a high degree of heat.

## Milburn Low Pressure Combination Cutting and Welding Torch

A low pressure torch which will operate on either low pressure or high pressure gas with equal efficiency, is made by the Alexander Milburn Co., Baltimore, Md. It is especially constructed to operate with low pressure acetylene



Chausse portable furnace

gas, city gas or hydrogen. It is excellent for use with a low pressure acetylene generator, it is stated.

It insures a correct and intimate mixture of the oxygen and acetylene resulting in "super mixing" and non-flashback qualities, it is claimed.

This torch is adapted to perform welding as well as cutting work by the mere interchange of tips. It performs practically all the cutting and welding operations within range of the process with efficiency and economy.

The torch is of bronze forgings and special seamless tubing, constructed to withstand constant service. The tips are made of solid copper and are interchangeable with a large number of low pressure torches of other makes.

## Jiffy-Jordan Cylinder Regrinder

The Jiffy-Jordan cylinder grinder is of the portable type and in use the block does not have to be removed from the car. The machine has a boring bar 30% in. long by 2 3/4 in. in diameter with over 12 inches of bearing surface. Gear drive is used throughout.

The construction of the machine, it is claimed, prevents the boring bar from following the old hole. The bar is centered over the cylinder by a three point centering head and the machine is then clamped to the face of the block by two heavy clamp bolts. By thus securing the machine, it is stated that there is every



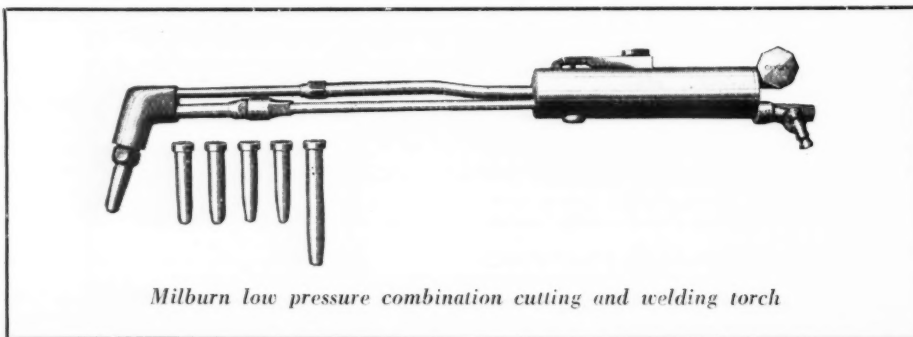
Jiffy-Jordan cylinder regrinder

assurance that the new hole will be at right angles to the crankshaft.

The grinding wheel is attached to the grinding spindle by an arbor and revolves at 5250 r.p.m. The spindle travels the full length of the boring bar through an eccentric sleeve which in turn passes through the boring bar. In use the boring tool is used first to straighten the out of round cylinder taking out both the oval and taper. The machine is made by the Jordan Machine Tool Company, Longfellow, avenue and East 28th street, Minneapolis, Minn.

## NEW UNIVERSAL CATALOG OF BATTERY PARTS AND SHOP EQUIPMENT

The Universal Battery Co., 3410 South LaSalle Street, Chicago, announce a new catalog, which is bulletin No. 90-E, which will be sent without charge to battery shops on request. In the front of the book is the Universal Creed, which outlines ten progressive steps which any battery shop can take to improve its business methods. The catalog lists all battery parts, complete batteries of all types for both automobile, radio and farm lighting service, and includes practically every tool that could be used in a battery shop. The catalog may be had by addressing Department MA of the company.



Milburn low pressure combination cutting and welding torch



# EDITORIAL

## Bigger and Better Associations

**D**EFINITE steps taken by two of the largest and most influential associations in the automotive industry to effect a consolidation of organization and activities are to be commended. The most effective argument in favor of such consolidation is that of economy and no less a person than Secretary Hoover of the Department of Commerce is a most powerful advocate of this method of eliminating waste.

The two organizations actively working toward consolidation are the Automotive Equipment Association and the Motor and Accessory Manufacturers' Association. Of these two the one best known to the retail trade is the Automotive Equipment Association on account of its active cooperation with jobbers and dealers in the promotion of better and more profitable merchandising methods.

The Motor and Accessory Manufacturers' Association, however, has a long record of useful activity in its particular field and the influence of its work no doubt has been felt very definitely by the retail trade. The A. E. A. is composed almost equally of jobbers and manufacturers; the M. & A. M. A. has only manufacturers as members. There is considerable duplication of manufacturer membership in the two organizations. The elimination of this duplication through consolidation would effect a saving to manufacturers both in dues and in the time of officials necessarily devoted to association activities.

It is to be hoped that this movement, heartily indorsed by the A. E. A. membership at its Colorado Springs convention, will be developed along broad and unselfish lines. It is certain that if the general welfare of the industry is considered and factional interests relegated to the background the consolidation will eventually take place and result in great benefit to the industry and worthwhile saving to the individual concerns composing the membership.

## Traffic and Children

**O**NE very important angle of the campaign for greater street and highway safety relates to the child. Something like a third of the victims of traffic fatalities is made up of children.

Children often play in the streets because, in many instances, there is no other place for them to play. Under present-day conditions of traffic the public thoroughfare is less adapted than ever for use as a playground and the public thoroughfare was not a safe playground even in the days of the horsedrawn vehicle.

We believe the automotive trade should take a leading part in the movement for more public playgrounds. During last year 231 cities opened 635 new play areas, representing 1924 as a forward year in this

connection—but the number of playgrounds in existence now must be increased many fold before the demand will be met.

Some cities are far ahead of others in playground development. Dealers who live in those cities which are trailing behind would do well to put their shoulders to the wheel. The interest of the automotive trade in safety projects should be made outstanding. It sells "safe transportation." It wants conditions corrected which militate against all elements of highway safety.

## Good Work at Indianapolis

**W**E can hardly think of a better activity for a local automobile dealers' association than the taking of a census of used cars in the hands of dealers, as was recently done at Indianapolis by the Indianapolis Automotive Trade Association. This census gave the make, model and year of all used cars on hand as of the date the census was taken. The detailed report was furnished to every member of the association. To the intelligent merchant this information is of great value as indicating the supply of used cars available in the particular market. But the Indianapolis association proposes to go further and make such a used car survey once a month. When that is done the automobile dealers will be able to file the monthly reports and by comparison they can readily determine the demand of the used car market and also the makes and models that sell best. No more useful function can be performed by a trade association than this, and this alone should be worth many times the cost of membership.

## A Code of Ethics for Motorists

**P**ROPOSAL of a national code of ethics for motorists by Thomas P. Henry at the three A's Atlantic City convention suggests a question: What has become of the old fashioned motorist who was always willing to lend a helping hand to another motorist in trouble on the road?

When you are stalled along the highway the offers of help from passing automobilists are not so frequent as they were a few years ago. Accommodation by the other fellow has become a moribund element. Save on rare occasions today he is utterly indifferent to the grief of anyone but himself.

Various changes in conditions doubtless have helped bring about this state of disinterest, but a code of ethics which essentially would emphasize a Golden Rule for those making up vehicular traffic, would be capable measurably of restoring the fine old institutions of highway accommodation and courtesy. A code of ethics would not likely preach accommodation but the influence of thinking along ethical lines would reach far in that direction.

# Sales Continue Better Than Normal

## Slowing Down From June Pace Is Observed, However

### Rate of Production About 10 to 15 Per Cent Lower Than That of Early Last Month

NEW YORK, July 8.—Some slowing down in output and sales of automobiles was observed during the week just past, and in the industry as a whole the rate of production is now from 10 to 15 per cent below the average maintained during the early part of June.

Conditions are, however, still better than normal for this time of year and optimism at the factories is unabated. Those concerns which have closed down to prepare for new models are expecting a big summer business, and in the case of several large producers output has not yet caught up with sales.

The July total of production for the industry, it is expected will be rather seriously affected by a two-weeks' closing down of a leading factory which has up to now been turning out cars at a record-breaking rate.

Truck sales are showing a downward tendency, but they are still running well ahead of last year at this time.

Exports in all automotive lines are continuing at the highest rate in the history of the industry.

With the seasonal decline under way, the manufacturers are bending their efforts to solve pressing merchandising problems, with the idea of bringing down costs and increasing distribution. The most important of these is insurance, and several plans under consideration are all intended to lower rates, which have been on the upgrade recently and have tended to increase resistance from new car buyers.

The manufacturers are also seeking to win back some of the lucrative replacement parts business which they have been steadily losing to independent makers of these parts. Quicker service and lower prices, it is held, will bring about the end desired.

Dealers were never in better shape reflecting the sound policies followed since the first of the year by the factories in limiting production to sales, maintaining prices during the peak of the sales season, and withholding the introduction of new models until the peak had passed.

### USED CARS IN DEMAND

ST. LOUIS, Mo., July 6.—Because he feels that used cars are in great demand in St. Louis and asserts that his company has been unable to fill the demand for nine used cars per day, Phillip H. Brookman, president of the De Luxe Automobile Co., Oldsmobile distributor in St. Louis has announced and advertised that his company will accept used cars as first payment on a new Oldsmobile.

## Ford of Canada Will Build And Distribute in Australia

FORD CITY, Ont., July 6.—The Ford Motor Company of Canada, Ltd., through its subsidiary companies, the Ford Manufacturing Company of Australia Proprietary, Ltd., and the Ford Motor Company of Australia Proprietary, Ltd., has taken over the assembly and distribution of its products in Australia.

Each of the Australian companies are capitalized at £1,500,000 and are now erecting five plants to take care of the growing Ford business in that country.

Ford bodies and such other parts that can be produced will be made by the manufacturing company while the assembly and distribution of the products will be carried out by the sales company. Both companies have headquarters at Geelong while the sales company will have branches at Perth, Adelaide, Brisbane and Sidney.

Since 1905 when the shipment of Ford products began until 1911-12 when over 1,000 cars were shipped, the number has gradually increased until upwards of 21,000 were shipped from here to Australia in 1923. This will be even higher for 1924 when final figures are released.

### YELLOW-G. M. MERGER ON

CHICAGO, July 6.—Rumors of a proposed merger of Yellow Cab manufacturing interests with the General Motors Corporation were confirmed here today. Details await to be worked out before any announcement will be made as to how the transfer of stock and property will be effected.

## Velie Reports One of Best Years in Company's History

MOLINE, Ill., July 6.—Velie Motors Corporation, of Moline, Ill., is having one of the best years in its history, according to C. W. Hadden, general sales manager. Shipments from the Velie factory during the past nine months have exceeded the corresponding months of the previous year with one exception, Mr. Hadden says.

March shipments were the greatest for that month in four years. Shipments for May showed 12 per cent increase over May in 1924 and Mr. Hadden predicts that June will show at least a 15 per cent increase over June shipments of last year.

Velie export business has greatly increased under the promotion of L. F. Murphy, assistant sales manager. Export shipments for the first five months of 1925 were approximately 50 per cent greater than during the corresponding period of last year, according to Mr. Hadden.

## Kissel Motor Car Company Announces Price Reductions

### Standard Models Undergo Several Changes and Two Speedster Designs Are Added

HARTFORD, Wis., July 6.—Announcement is made by G. A. Kissel, President of the Kissel Motor Car Company, that prices on all popular models in the Kissel line have been reduced.

The price of the five passenger six cylinder brougham has been lowered from \$1895 to \$1795. The eight cylinder four door brougham sedan has been reduced from \$2550 to \$2395 f. o. b. factory.

In addition to this price reduction the factory announces certain new improvements in models. All models are now mounted on the new Kissel stabilized chassis which is said to mean a frame with greater rigidity and longer life.

The eight cylinder special sedan mounted on 137 inch wheelbase now has wide 32 inch doors. In addition to these changes Kissel is now building a four passenger open speedster and four passenger closed speedster.

The company also is bringing out wider doors on all four door models. These doors are 30 inches wide. Moreover, the windows which are low and extremely wide enhance the appearance of the cars.

## Race Driver of Automobile's Early Day, Now Merchandising

COLUMBUS, O., July 6.—T. W. Pickard, head of the T. W. Pickard Co., Ohio distributor for Panyard Piston rights has the distinction of being among the first racing drivers of the Middle West if not the country at large. In 1903, while superintendent of a carriage factory he conceived the idea of building an automobile which he finished early in 1904.

It consisted of a horizontal air-cooled motor with two cylinders. He named it the Imperial and exhibited at the Madison Garden Show of 1904 and took many orders. He entered the Glidden tour in the race from Pittsburgh to St. Louis with about 250 cars of all kinds, winning the tour by rolling into St. Louis first. His place of business which was recently opened is located at 228 North Fourth St., Columbus.

### GENERAL ISSUES WARNING

AKRON, O., July 6.—The General Tire & Rubber Co. has sent word to its distributors throughout the country, warning them against over-stocking with tires now that prices are rising. The warning includes an intimation that by buying more tires now than are needed for normal requirements, the manufacturers are forced to buy rubber at a high price, and dealers automatically raise prices on themselves and on the public.



## Truck and Bus Delegates Bolt From A. A. A. Meeting

### Hopes of National Organization for Mutual Aid Blasted at Convention

NEW YORK, July 6.—The automobile industry's hope for a powerful and unified national organization of truck and bus operators, that would be able to function effectively on such matters of common interest as taxation and highways, received a setback at the meeting of the American Automobile Association which just ended at Atlantic City.

A virtual secession took place there of a group of truck and bus men, mainly presidents of local organizations, who had until then been active in the Truck and Bus Division of the A. A. A., which was supported by the National Automobile Chamber of Commerce. It was the avowed intention of these men, headed by Ralph W. Sanborn of Cleveland and George P. McCallum, president of the Michigan Transportation Association, to establish as an independent organization the National Bus Association.

The National Bus Association was formed recently in Chicago at a meeting in which the Truck and Bus Division of the A. A. A. was prominent, and the burning question immediately arose as to whether it should be affiliated with the car owners' body. At the Atlantic City meeting disagreement on this point came to an issue, and resulted in the secession of the executive committee of the National Bus Association.

The "independents," as they have termed themselves, have expressed resentment at what they declare to be the intention of the manufacturers to dominate the truck and bus owners activities. The manufacturers, on the other hand, declare that they are interested in co-operation on matters in which both makers and owners are concerned.

The up shot of it all is that the tendency of local association and local owners to fight among themselves is complicated by disagreement on a national scale.

### DUESENBERG PRICES

INDIANAPOLIS, July 6.—A new price list of Duesenberg models has been issued, quoting only the price on the five-passenger phaeton and the prices of the two chassis lengths. The four passenger coupe which was formerly listed at \$7,500, has been discontinued by the company, but officials expect to replace the coupe with another model in a short time.

The list follows:

Duesenberg roadster—On application.

5-pass. phaeton—\$6,650.

4-pass. sport—On application.

7-pass. phaeton—On application.

5-pass. sedan—On application.

7-pass. sedan—On application.

Chassis 134-inch—\$5,550.

Chassis 141-inch—\$5,650.

## Sprinter and Buick Race in Traffic

MILWAUKEE, July 6.—George Breitbach, Buick dealer in West Allis and South Milwaukee, suburbs of Milwaukee, staged a novel publicity stunt when he engaged John J. Seiler known as "The Flying Yank," and a distance runner of great ability, to race through Milwaukee streets against a Buick.

The car was operated in high gear only and Seiler had advantages in the way of being able to go through traffic signals when the car had to stop. The race attracted considerable attention, largely because of the recent appearance in Milwaukee of Paavo Nurmi and the subsequent interest in running events.

## Reo's June Sales Increase 90 Per Cent Over 1924

LANSING, July 3.—June with an increase of 90 per cent in shipments and company sales as compared to June 1924 was one of the best months in the history of Reo. The shipments last month according to sales officials means sales since dealers buy only as actually required.

The company went over into July with a third as many orders as its total June record. Heavy buying the latter part of the month boosted the July production schedule.

Because of the increasing demand for the new heavy speed wagon and also for the motor busses the company will not make the annual vacation general this year. The bus plant which is producing the new heavy is included in this decision as the sales are too heavy, company officials assert, to let down for two weeks.

## Continental Motors Declares Regular Quarterly Dividend

DETROIT, July 6.—At the regular meeting of the board of directors of Continental Motors Corporation held recently the quarterly dividend at the rate of 80 cents per share per annum was declared payable July 30 to the stockholders of record July 15.

With this dividend, the company will have paid to stockholders during 1925 the sum of \$1,056,507.

In discussing prospects for business for the coming quarter, Ross W. Judson, president of the company said, "Our production and sales are more than holding their own, and indications point to a very successful quarter. Our customers are maintaining their schedules, and it is particularly gratifying to us to see the way our business in the industrial division is increasing. Both our Muskegon and Detroit plants are operating nearly to capacity, which is rather unusual at this time of the year."

## Vice-President Haskell of G. M. Export Co. Resigns

### L. R. Rumely to Succeed As General Manager—Harry Tipper in Charge of Sales

NEW YORK, July 6.—J. D. Mooney, president of General Motors Export Co., announces that A. L. Haskell, director, vice-president and general manager of the company, has resigned to engage in business enterprises that will permit residing more permanently in New York.

Leo M. Rumely, vice-president and regional director of Australasia, has been appointed to succeed Mr. Haskell. Mr. Rumely joined the export company in 1920 and during the last two years has been located in Sydney, Australia. Prior to his connection with General Motors he was engaged in the development of the implement business in foreign countries. His experience covers residence in Canada, South America and Russia.

J. H. Dreibelbis, who has been general sales manager, has been elected a director and vice-president. He will serve as executive assistant to Mr. Mooney.

Harry Tipper, secretary of the Chilton Class Journal Co., will become general sales manager of the General Motors Export Co., July 15. He has been engaged in sales and marketing work for the last 15 years, following his early work in engineering and shop management in England. For several years he was connected with sales engineering work in the marketing of mining machinery, and in 1908 joined the Texas Co., as sales engineer. Later he became advertising manager and member of the sales committee of that organization, remaining there until 1907 when he was made manager of The Automobile, now Automotive Industries.

### STUTZ ADDS DEALERS

INDIANAPOLIS, July 3.—The merchandising department of the Stutz Motor Car Company reports that new dealers and distributors are being added to the organization steadily and that sales are continuing at a normal rate, keeping pace with normal factory production, which is being continued into the third quarter. The newest dealer additions reported are Harlan Fengler, Inc. of Hollywood, California, and the San Diego Stutz Company. Mr. Fengler, who heads his own selling organization, is the youthful speedway star who has retired from racing to merchandise Stutz cars.

### STROMBERG OPENS K. C. BRANCH

CHICAGO, July 6.—Stromberg Motor Devices Company, builders of Stromberg carbureters, has established a new factory branch at 1809 McGee street, Kansas City, it was announced here today. It was found necessary to establish the factory branch on account of sales expansion in the Kansas City territory.



## Indianapolis Used Car Trade In Good Shape, Survey Shows

### About Four-Fifths of Present Stock Consists of Current Makes and Models

INDIANAPOLIS, July 6.—The used car inventory compiled by John Borman, manager of the Indianapolis Automobile Trade Association, during the latter half of June shows that there was a total of 1,615 cars on hand at that time in the city as reported by 69 distributors, dealers and used car exclusive dealers of the city. The cars were divided into three classes; current models and makes that are sold here dating from 1920 to the present; miscellaneous types and models of cars for the same years but which are not so readily saleable because there are no dealers for them in the city, and obsolete makes; and third, models of all sorts manufactured from 1912 to 1919.

Of the 42 makes of cars which are actively marketed here by new car dealers the total shows that almost four-fifths of the total stocks of used vehicles on hand at present are vehicles of this type, not more than five or six years old and but 50 of them are of earlier vintage than 1920. Thus approximately 1,300 of the total of 1,615 cars are current, active stocks of 42 makes not more than four years old. The black side of the sheet shows 273 vehicles of inactive types, with 236 ancient used vehicles from six to fifteen years of age.

The survey made a year ago with 61 dealers reporting showed 2,170 cars on hand, so this report shows a distinct gain of at least 20 per cent. While some dealers in both surveys may have failed to report exactly, the general improvement is none the less proved and the classification of all cars attempted for the first time in the current report shows that the great majority of all used cars are saleable, profitable stocks. Further the present total about equals the average month's sale of new cars in this county, as shown by monthly registration figures from the state registration bureau, and proves that the used car trade here is in a healthy state with approximately a month's supply on hand. The dealers here consider Orman's report and survey the most helpful one ever made.

## N. A. F. C. Releases Brief on Recovery of "Booze Cars"

CHICAGO, July 6.—A seventeen page brief, prepared by John W. Creekmur, Chicago counsel for the National Association of Finance Companies, setting forth all court decisions having a bearing on recovery procedure in cases where automobiles have been confiscated for transporting liquor, has been released by Charles C. Hanch, general manager of the national association.

The brief has been issued to members of the organization, and covers fully the

subject of title, recovery by the lienor of a car used without his knowledge for the transportation of liquor, and many other phases of the present problem which has arisen through confiscation of so-called "booze cars" by federal or state authorities. In many cases the title is still in the finance company, and the brief quotes decisions of various courts as to how the lienor may be protected should the car be confiscated.

"The brief is one of the latest instances of the aid the national association is extending to the member companies," said Charles C. Hanch. "It would cost an individual company between \$500 and \$1000 to prepare such a brief for its reference in cases of this kind."

### DIVIDENDS DISTRIBUTED

TOLEDO, July 6.—Nearly a million dollars in dividends was distributed to stockholders of Toledo automotive plants this week. The Electric Auto-Lite Co., paid out \$375,000 to its common shareholders, the Willys-Overland paid out \$385,866 to its preferred stockholders, and several of the other closed corporations distributed earnings at the semi-annual date.

## Pierce-Arrow Has Coach Design Body

THE Pierce Arrow Motor Car Company is the latest to reduce the differential in price between open and closed cars. On the model No. 80, lighter six cylinder chassis, a new custom built coach selling at \$3,150, \$55 less than the 4 passenger phaeton, has been announced, this being the first offering of a coach design body by Pierce Arrow.

Built entirely at the Buffalo factory, the body framework is constructed of Northern white ash having laminated joints wherever twisting or weaving strains occur. Both doors are double braced and fitted with weather strips to keep the body moisture proof. The body is covered with aluminum panels, hand hammered to provide perfect contour.

Six color schemes are offered for the exterior finish while a wide range of soil-proof upholstery is available. Entrance and exit from the tonneau without folding the tilting front seat is possible through the 36 inch doors, the latter carrying across the bottom a strip of carpet to match the velvet floor covering to protect the upholstery from feet marks. The rear seat is 50 inches wide, the 42 inch space between the two seats allows comfortable riding for the tallest passengers.

Royersford springs and curled hair are used for the cushions while the interior hardware is of Butler silver finish. A trunk protected by bars is carried at the rear and the interior equipment includes, silk roller curtains for the rear and rear quarter section, silk toggle grips, mahogany vanity and smoking cases, carpet covered foot rest and a dome light.

## Southern Jobbers Will Meet at Asheville, N. C., July 23-25

### Merchandising, Better Business Relations and Outlook Will Be Among Subjects Discussed

CHARLOTTE, N. C., July 6.—Officers of the Southern Automotive Jobbers' Association selected Asheville, N. C., as the place for holding the Summer convention, July 23-25 being the dates, according to an announcement by Thomas McP. Glasgow, of Charlotte, president, who made public details of the program. Holding the meeting at that famous resort city is expected to result in an unusually large attendance, Mr. Glasgow said.

One of the widely known men in the automotive trade world who will address the convention is Earle Hennecke, of Long Island City, N. Y., president of the Boyce Motometer Company. His address will deal with merchandising problems.

Arthur Mogge of Chicago, merchandising director of the Automotive equipment Association, will discuss that association's plans to create better business relations. Economic phases of the automobile jobbers' problems will be discussed by E. B. Galliher, of Norwalk, Conn., and a statistical analysis of the business outlook for the automotive jobbers will be given by Arthur Hope, of Hartford, Conn. In addition to the set addresses, members will engage in a general discussion of the numerous important business problems confronting them, Mr. Glasgow said.

The program also includes several elaborate social events.

## Chicago Registrations Surpass 1924 Mark in First 6 Months

CHICAGO, July 6.—Automobiles paying a wheel tax to the city of Chicago for the first six months in 1925 numbered 259,759, City Collector Keane announced today. The total number registered in 1924 was 260,887, pointing to the registration in 1925 much greater than that of 1924. It was expected that the old total would be surpassed within a few days.

Delivery trucks have passed the old total, numbering 45,180 for the first six months while the 1924 aggregate was 44,931. The number of horsedrawn vehicles decreased from 21,071 to 17,452.

Money collected by the wheel tax office thus far this year amounts to \$3,690,520. The first six months of 1924 brought in \$3,374,170 and the total for the entire year 1924 was \$3,562,458.

### NEW AUBURN DEALERS

AUBURN, Ind., July 6.—New dealers recently added to the Auburn Automobile Company organization are:

J. A. Burkley, Findlay, O.; Fitz Auto Company, Linton, Ind.; Gallitto Motor Sales, Cleveland, O.; Frank S. Feaser Co., Indianapolis; W. C. Sacks, Penn Yan, N. Y.; Radio Motor Sales, 1834 W. Madison Street, Chicago, and Bondurant Motor Sales, Evanston, Ill.

## New Oregon Laws Expected To Curtail Thefts of Cars

### Three Statutes Effect More Rigid Control Over Title and Its Transfer

PORTLAND, Ore., July 3.—New motor vehicle laws enacted by the last session of the Oregon legislature are expected to curtail in large measure automobile thefts in this state. Myer C. Rubin, general attorney for the Oregon State Motor Association, in outlining the provisions of the new statutes said:

"Three measures have a direct bearing on this question, although two of them only are included in the motor vehicle code and the other is general in its scope.

"Under the new provisions regulating the matter of title to automobiles, all applications for licenses made after July 1 must be accompanied by an application for certificates of title.

"This certificate, however, must be formally transferred whenever the car is sold. The placing of such records on file will, in a very short time, provide a source of information which will be invaluable in keeping tab on the ownership of machines.

"Further clarifying the situation in Oregon is an improvement in the definition of terms. A distinction is now made between the owner of the car and the legal owner. In a case where a man purchases a car on time, and the dealer still holds actual title, the purchaser is listed as the owner, but the seller is still the legal owner, until the liens have been discharged.

"The general statute which materially affects the matter of theft of cars is one making it a crime to alter, counterfeit or change a serial number of any manufactured article with intent to defraud. A penalty of from \$20 to \$100 or six months in jail is provided for so doing, and also for selling the article without advising the purchaser of the change."

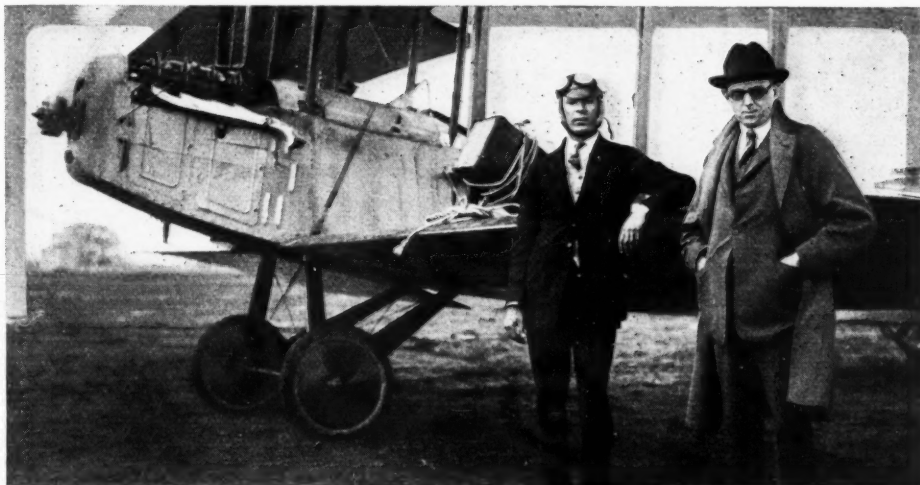
## Sales Register Big Advance In Louisville During June

LOUISVILLE, Ky., July 3.—Sales of both new and used cars increased during June in Louisville and it is expected that figures for the entire month will show a decided increase over May of this year and June of last year. Sales on low priced cars are slightly off while dealers report an increase of nearly 50 per cent in sales of the car next above in price.

Medium priced cars show an increase of 20 per cent over the same month last year and about one-third more have been sold than in May of 1925. Higher priced automobiles are moving well. The check indicates that used car stocks are lower than usual with sales equal to if not slightly better than those of new cars.

General business conditions are excellent; very little unemployment is reported and these factors combined with good weather are pushing sales and causing repossession to show a decided

## He Flies to Market



When Charles Blosser of Belleville, Kansas, one of the dealers furnished by the Chevrolet Motor Company's Kansas City branch, finds himself short of Chevrolet motor cars with which to make deliveries he no longer hops a train and spends seven hours in getting to the wholesale office in Kansas City. Mr. Blosser now flies to market in his own plane. On the left is the pilot

decrease each month. Collections are improving.

Tire dealers report a decided improvement in sales of balloons and regular pneumatics, sales being about 30 per cent above the same period last year. Truck solids are off a little but it is predicted that this branch of the tire business will improve during the summer months. Some dealers expect record sales of balloons and regular pneumatics.

## New England Racing to Be Revived

BOSTON, July 3.—New England is going to see a revival of motor racing which will recall memories when some of the best drivers developed in the United States were from Boston. On July 4 and Columbus Day, Oct. 12, there will be races at 100 miles on the new Rockingham Park Speedway at Salem, N. H., an hour's run from Boston. Jack Le Cain, former race driver, with several other men, bought the track recently from the Searles estate for \$100,000 and they are spending half as much more putting it in shape. Le Cain has De Paolo, Milton, De Palma, Cooper, Elliott, and a number of other speedway stars signed up for the first opening July 4 when \$20,000 will be given in prizes. He has received the A. A. A. sanction. The track is being reconstructed and it is expected that the drivers will show a speed of 100 miles an hour. Capt. E. V. Rickenbacker has been invited to pace the drivers on the first lap.

## North Carolina Dealers Are Reporting Increased Business

CHARLOTTE, N. C., July 3.—The majority of automobile distributors in this center, third in importance in the South, are reporting a "rushing" business, with only two or three inclined to be gloomy. The Ford Motor Company's branch here has reported that total sales in this territory for the ten-day period ended June 10 exceeded by 500 cars the sales for the previous like period. Sales for the first ten days of June totaled 1,863 cars, the largest volume of business handled in a like period in this territory since it was established about two years ago with its present limits.

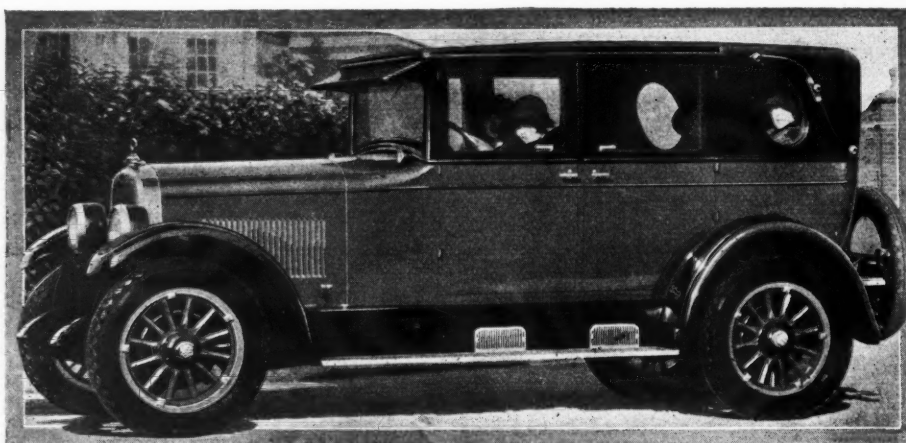
While this tremendous increase in sales is continuing, figures already in hand show, it will be some time before complete supplementary figures will be available, it was explained. An increase of at least 200 cars over the total for the first ten days of June was forecast for the second like period.

Production at the Charlotte plant has slumped sharply, for two important reasons, since May 1, when the local plant was operating on a schedule of about 450 cars per day. Production now on a basis of 221 cars daily, compared with 353 cars daily the middle of May. This decrease early in May was largely attributed to a slump in buying by farmers, who then began to devote almost all their time to field work in this territory.

Since that time, the opening of the Norfolk, Va., branch plant has been an important factor in cutting production here. Officials of the company here explained that the Norfolk plant can ship cars as far south as Raleigh, N. C., cheaper than they can be shipped from the Charlotte branch.



# Cleveland Has New Sport Sedan at \$1725



*Cleveland Sport Sedan which is mounted on the model 43 chassis and finished in blue, with black upper structure and fenders*

A NEW sport sedan mounted on the Cleveland 43 chassis and listing at \$1725 has just been added to the line by the Cleveland Automobile Company. The latest 5-passenger closed model is patterned along the victoria type lines having oval windows with aluminum top bows built into the rear upper section and provided with an aluminum trunk rack and bars at the rear. The design of the body, which is by Fisher, gives the car a long, low hung effect.

Foch blue Duco with the beading in contrasting color, black finish above the belt and black fenders and running gear together with the nickel plated radiator shell carrying a motometer and bar gives the new model a very distinctive appearance.

Gray mohair of special shade constitutes the upholstery and color scheme. Comfort is provided by making the seats wide and high backed and providing an arm rest on each side of the rear seat.

Features of the body equipment are: Fisher "V-V" windshield and rectangular windows operated by crank regulators, instrument board finished in circassian walnut, silk curtain for rear window and dome light controlled by a push button.

Additional items as standard equipment include, automatic windshield cleaner, sun visor, rear view mirror and cowl lights.

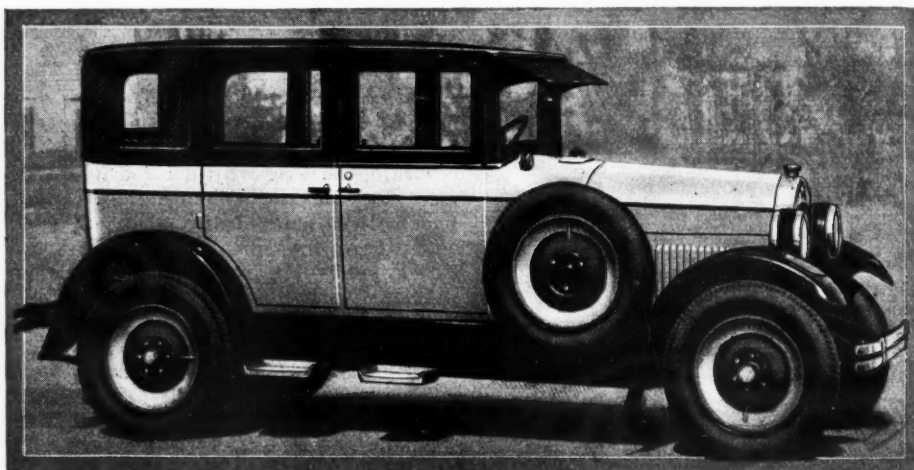
## CANADA RUBBER RAISES

TORONTO, Ont., July 6.—Owing to rapid advances in prices of crude rubber, and in sympathy with the recent advances in quotations in the United States, prices locally have been advanced 5 per cent on tires and 10 per cent on tubes. It is stated that manufacturing costs warrant still higher prices in Canada, but that domestic competition is so keen that advances are held to very narrow margins. However, increasing costs of raw rubber may make it necessary for manufacturers to raise prices further on tires and other rubber goods.

## Davis Announces a New Sedan

A NEW Davis Sedan, selling at only \$200 more than the Davis phaeton, has been announced by the George W. Davis Motor Car Co., Richmond, Ind.

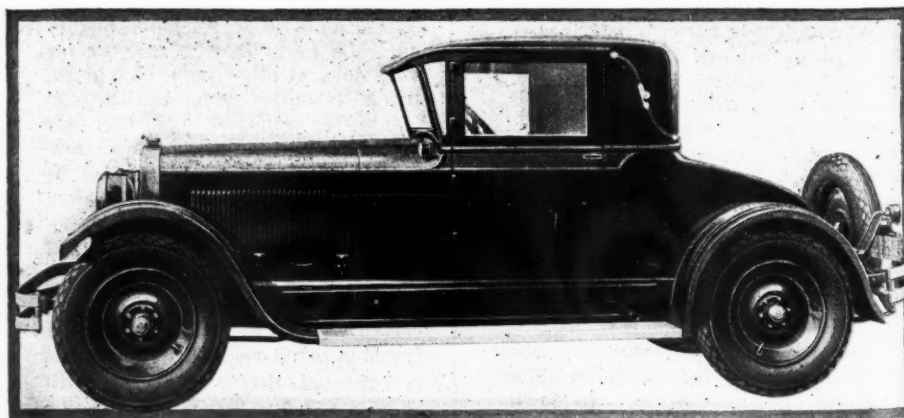
Three wide doors give easy access to both front and rear seats, and the interior of the car is exceptionally roomy. The interior of the car is finished throughout with upholstery of Baker velour. A new instrument board grouping, in which motor thermometer, oil gage, gasoline gage, ammeter and speedometer are assembled under an indirectly lighted oval glass panel, adds to the convenience of the driver.



The lines of the sedan are enhanced by a dual-tone finish, which is optional in combinations of either Algerian and Rolls-Royce blue or Brewster and Topango green, without additional cost. Radiator and bumpers are nickel-plated, and a spare disteel wheel is carried on the right side of the car. Balloon tires and Lockheed hydraulic four-wheel brakes are

standard equipment. The new sedan is built on both the series 90 chassis and the larger Mountaineer series 91.

The Davis company also has announced price reductions of \$200 on the Imperial and Berline sedans, bringing the prices of these models in the series 90 to \$1,795 and in the Mountaineer series 91 to \$2,095.



*Gardner Eight-in-Line Foursome Cabriolet which has a windshield construction designed to eliminate "blind spots." There is a seat under the deck and a sliding plate glass window permits communication with passengers in the rear seat. The car with five Disteel wheels and 5.77 balloon tires lists for \$2245, f. o. b., St. Louis*

## Paige-Jewett Opens Sales Contest to Close Oct. 1

### Thirty Prizes Arranged in Four Classes, Each Being Trip to Factory

DETROIT, July 3. — Paige-Jewett salesmen throughout the country are given the opportunity of visiting the Paige-Jewett Motor Car Company factory here this fall at the expense of the organization through a competitive sales campaign which has just opened and which will close October 1.

Thirty prizes will be awarded in the four different classes that have been established, each prize being a trip to the factory with all expenses being paid by the organization.

The four classes under which the various contestants will compete are:

Class One. Limited to salesmen employed by distributors, dealers or associate dealers participating in the Paige direct-by-mail campaign in or having selling rights in cities of 500,000 population or over. Ten prizes will be awarded in this class.

Class Two. Limited to salesmen employed by distributors, dealers or associate dealers participating in the Paige direct-by-mail campaign in or having selling rights in cities between 150,000 and 500,000 population. Ten prizes will be awarded in this class.

Class Three. Open to salesmen, retail sales managers and dealers employed by or being distributors, dealers or associate dealers participating in the Paige direct-by-mail campaign in or having selling rights in cities between 50,000 and 150,000 population. Five prizes will be awarded in this class.

Class Four. Open to salesmen, retail sales managers and dealers employed by or being distributors, dealers or associate dealers participating in the Paige direct-by-mail campaign in cities having under 50,000 population and having no selling rights in cities of larger population.

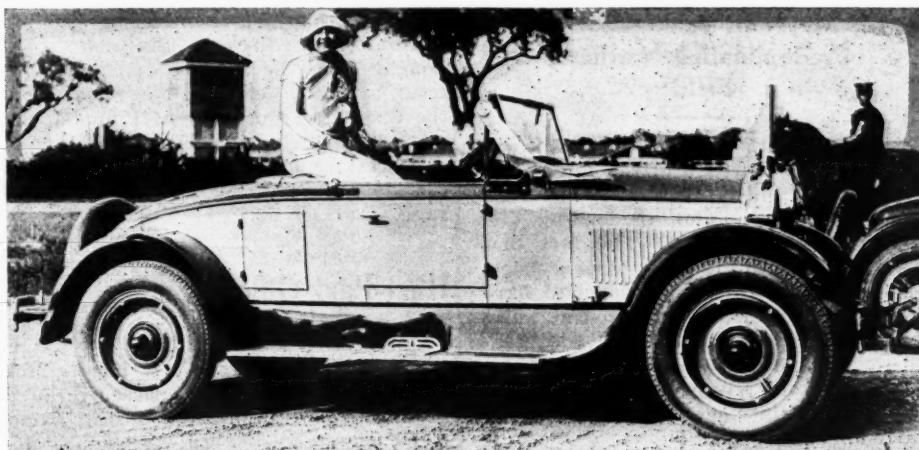
In case of ties, awards will be made on a basis of sales from October 1 to November 1. Should two salesmen be tied at the end of the contest for the last place in their class, the salesmen selling the most cars between October 1 and November 1 will be awarded the trip.

## Canadian Ford Prizes Are Awarded in Sales Contest

FORD, Ont., July 6.—In the sales contest just ended which was held by the Ford Motor Company of Canada, Ltd., two prizes of \$1,000 each and two of \$500 were awarded to salesmen. In addition weekly prizes of \$100 were awarded the salesmen who sold the most new and used cars to the classified trades and professions.

In the first divisions, the two salesmen who at the end of the 23 weeks lead the whole Dominion with the largest totals were H. P. Latter, Dominion Motor Company, Ltd., Winnipeg and N. H. Doyle,

## Reo Roadster Wins Pageant



*Feminine finery and latest fashions in motor cars went on parade in New Orleans together recently. The above is the winner of the pageant—the Reo roadster which Miss Lucille Mooney drove in the parade*

Universal Car Agency, Ltd., Windsor, Ont. In the second division, those who lead with the highest totals of clean sales were C. E. Jarry, of Jarry and Frere, Quebec, and E. McDermott, Vancouver Motors, Ltd., Vancouver, B. C.

The weekly prizes found their way to salesmen all over the country, the prizes being evenly distributed in the smaller and large communities.

The second phase of the Farmer-Ford-owner contest conducted by the Ford Motor Company of Canada, Ltd., has been brought to an end with thousands of farmers throughout Canada participating. The prizes were new Fords, Fordsons and attachments. Prizes were awarded in each of the eight branch territories throughout the Dominion.

### ASSOCIATE DEALERS NAMED

SPRINGFIELD, Mass., July 3.—Continuing its policy of naming associate dealers for the Hudson and Essex, J. S. Harrington, Inc., has appointed these new concerns in that capacity: Jack Stone and Henry Puggeoli, Springfield; John C. Schmidt, Longmeadow; Zobek Motors, Inc., Indian Orchard; W. R. Taylor, West Springfield. Walter Phillips, associate dealer in Springfield, now conducts two establishments.

### CHRYSLER SALES JUMP

WINDSOR, Ont., July 3.—Sales of Maxwell and the Chrysler six-passenger cars in Canada for the first six months of 1925 will more than surpass the total sales for 1924 or 1923, John D. Mansfield, president and general manager of Chrysler Motor Co., Ltd., of Canada, has announced. Ontario and Quebec are the provinces where the heaviest buying has been taking place. In the agricultural districts of the west, the outlook for the next three months is good. With good crops reported in the wheat sections and with indication of the farmers getting a good price for their goods, the sales of automobiles are expected to show a corresponding jump.

## Ford Plans to Run Airplane Freight Service to Cleveland

DETROIT, July 3.—Extension of the air freight service of the Ford Motor company beginning July 1 to Cleveland has been announced here by the company. A third plane now being thoroughly air tested will be used. In case of emergency, one of the Chicago planes can be switched over to the new run.

Further extension of the air freight service is under consideration at the present time, although plans are still indefinite and may not assume shape for months. These extensions would include Pittsburgh, Philadelphia, New York, Boston, Buffalo, and St. Louis.

The arrival of the air freighter next Wednesday will formally open the new Cleveland municipal aviation field. Its cargo will consist of a knockdown Ford chassis which will be assembled on the field and then driven away under its own power.

There also will be on board the plane, the first bundle of mail to be carried by plane between the Ford company here and its Cleveland plant and some packages sent along by members of the Ford family as mementoes.

## Registrations in Mississippi Are Double Those of 1924

NEW ORLEANS, La., July 6.—142,600 motor vehicles were registered in Mississippi from January 1 to June 1, 1925, with license collections amounting to more than \$1,500,000 which is in excess of the revenue received during the entire year of 1924, according to figures made public at the motor department of the state auditor's office in Jackson, Miss., recently.

A total of 134,657 vehicles were registered during 1924 in Mississippi, from which license collections of \$1,125,908.72 were made. On June 1 of last year the motor registration had reached 108,136 as compared with 142,600 for the same period of 1925.



## Milwaukee Sales Expected To Climb Throughout July

**April, May and June See Lethargy  
Predominating Northern  
Field**

MILWAUKEE, July 3.—July will witness a sharp increase in the number of automobiles sold in Milwaukee and Wisconsin, in the opinion of leading distributors of Milwaukee. The fact that many manufacturers will introduce new models during July is expected to have a decisive influence in stimulating sales to a point more on a level with last year. Anticipation of price cuts to occur in July or early in August is another factor prompting local expectation of big sales for these months.

During June there was a pronouncedly lethargic condition current in the automobile sales business in Milwaukee and Wisconsin. Distributors ascribed the lack of snap in the sales end largely to the fact that bank accounts of otherwise prospective buyers were not normal and that there was some stricture in the money situation as it affects the average citizen.

That May was not entirely a month of losses is well indicated in the experience of Nash, this company forging ahead to new records, with a May, 1925, sale of 538 as compared with only 317 for the same month last year. Another substantial gain was that of Hudson, 399 of these cars being sold in Wisconsin in May of 1925, as compared with but 215 in May, 1924. A big upward jump was taken also by Essex with May sales for this year of 430 as against only 337 in May, 1924. Studebaker sold 477 cars this May and 440 in May, 1924.

These gains while large in themselves, in many instances being as high as 66 per cent increase, are all the more noteworthy in the face of the general sales trend which is something like 30 per cent below May of 1924. It is patent then, that the cars listed as registering gains of 60 per cent, are in reality about 90 per cent above average. It is also a fact that the cars leading in sales gain in May are those which led in April and in March.

### VELIE ORGANIZATION MEETS

MOLINE, Ill., July 3.—Distributors from all over the nation and district representatives of the Velie Motors Corporation were gathered at the plant here this week for the first of a series of distributors' sales meetings, announced recently by C. W. Hadden, general sales manager. Mr. Hadden pointed out that Velie sales in the last nine months have exceeded those of every corresponding month in the previous period, with the exception of one and predicted that July sales would exceed the 1924 month by 15 per cent. Export business in the first five months has increased 50 per cent over 1924 he said and gave every indication that this will be a banner year for the Velie.

### MONTREAL ORDERS COACHES

MONTREAL, July 6.—Fourteen coaches to cost \$146,818 have been ordered by the Montreal Tramways Company, for the bus services which it intends to operate beginning in August. Six are to be bought from the White Company, Montreal, at \$9,550 delivered here; four from the Six-Wheel Company of Philadelphia, at \$12,968 including delivery, duty and sales tax, and four from the Yellow Coach Manufacturing Company of Chicago at \$11,661.52.

## Hart-Parr Official Sees End of Tractor Troubles

PEORIA, Ill., July 6.—"The tractor industry has successfully passed through a most drastic liquidation with a handful of manufacturers still swimming," declared Melvin W. Ellis, general manager of the Hart-Parr Tractor Company at a meeting of 150 state distributors held in this city.

"The dealers of those who kept going during the hard times, are the ones who will reap the harvest of tractor orders which are certain to come during the coming year," he asserted. He predicted that sales for 1925 would be the largest of any since 1920.

In connection with the meeting, a dinner was served at the Creve Coeur club. Fifty bankers were presented and heard talks by factory representatives and leading distributors of Illinois.

### REGISTRATIONS INCREASE

QUEBEC, July 6.—Compared to the same period of the year in 1924 the number of motor vehicles registered in the province this season has considerably increased. Last year's figures totaled 35,000 cars registered as against 45,000 this year.

## Marmon Earnings \$1,178,198 In First Six Months of 1925

INDIANAPOLIS, July 3.—A Nurdyke & Marmon announcement released yesterday by President G. M. Williams shows that for the first six months the company made net earnings of \$1,178,198, after all deductions for depreciations and contingency allowances. Mr. Williams reports that the progress of the company for the six months has been very satisfactory with sales steadily increasing. The retail selling organization expanded about 20 per cent in the last six months.

Shipments of Marmon cars for the six months have been almost 100 per cent ahead of the similar period last year and by reason of inventory reductions during the latter part of 1924 it has been possible to revolve the inventory at the rate of 10.28 times per year.

For the future Mr. Williams sees encouraging prospects with distributors and dealers finding that the high rate of selling will continue with late summer and fall business equaling the increase shown in the first six months.

## Mooring Mast Completed At Ford's Detroit Airport

**Flying Club Is Given 120 Acre  
Aviation Field on Lake  
Front by Realtor**

DETROIT, July 6.—Two important events in aviation circles, the completion of the 210-foot dirigible mooring mast at the Ford Airport and the presenting to the local aviation club of a flying field, have just occurred in this city.

Located in the center of 200 acres at Dearborn, the \$250,000 mooring tower represents a decided advance in both engineering and mechanical principles and is the latest achievement of Henry Ford to make Detroit the world center of aviation. The mast, which is 45 feet taller than the one at Lakehurst, N. J., was completed in 30 per cent less time. Most of the steel employed in its construction was fabricated in the Ford mills.

Mooring is accomplished by means of lateral couplings extending out from the landing platform on the top of the tower and in the event of a gale of greater velocity than 60 m.p.h. threatening the safety of the airship while moored to the mast, the attachments will automatically let the dirigible loose.

Within a few days the "Shenandoah" is expected to arrive for trials at the mast, while it is rumored that a rigid airship of the latest and most modern type will be built within the coming year for the private use of the Ford family.

Lewis G. Pilgrim, noted realtor, has given to the Detroit Flying Club an aviation field of 120 acres on the lake front, 15 miles south of Cheboygan. It is planned to erect hangers to accommodate both land and water planes and to make the field a vacation camp and meeting place for Michigan aviators.

## Connell & McKone Selected Boston Gardner Distributor

BOSTON, July 3.—The Connell and McKone Company has been appointed new and exclusive distributor of Gardner cars in New England. The company is one of the best known in this section of the country. For a number of years it handled the Willys-Overland line until the company made it a factory branch. When Flint came on the market, the company handled that line.

A few months ago, this was released and W. C. Durant established a factory branch in Boston. The Gardner formerly has been handled here by the Leghorn Motors Co. George M. Leghorn, its president, has announced that he will continue as retail dealer for the Boston territory under the Connell-McKone company. This will allow the Gardner Motor Co. a big representation throughout New England.

The Connell & McKone Company will operate from the salesrooms of the Leghorn Motors Co., one of the finest on Commonwealth Avenue.

## Sale of New Cars Continues Satisfactorily in Salt Lake

### Registrations for May Ahead of Those for April But Below Last Year

SALT LAKE CITY, July 3.—The sale of new cars continues satisfactory. Business might be described as about normal this time of year. Weather conditions during the early part of June were not satisfactory but are ideal now. New car registration in May included 1,659 passenger cars and 195 trucks compared with 1,249 passenger and 95 trucks for April. This compares favorably with May of last year when the registration showed 1,683 new cars and 133 trucks.

The used car market is improving though conditions are not yet entirely satisfactory and may not be for some time to come. Dealers in most cases are still allowing more for the used cars than they can afford.

The tire market is brisk, due in part at least to the increase in prices, and also to the increase in popularity of balloons. The general accessories business is satisfactory.

Collections are satisfactory, taking the territory as a whole. This is not only true of the automobile and accessory business but business in general.

The automobile business and allied industries would seem to have an excellent future as far as the next few months at least are concerned.

## President Hardy Resigns From Olds Motor Works

LANSING, July 3.—Announcement is made that A. B. C. Hardy, president of the Olds Motor Works, had sent his resignation to the New York office of the General Motors asking to be relieved of his duties at once.

Mr. Hardy has no present plans for the future. He will stay in Lansing and will rest for some months, something that he has desired for some time.

In 1892, Mr. Hardy started in the carriage business and between that time and 1900 he was with the Wolverine Carriage Company of Davison, Mich., Diamond Buggy Company of Flint and the Durant-Dort Buggy Company also of Flint. In 1901 he made an exhaustive study of the automotive industry and in the following year organized the Flint Automobile Company, the first started in that city. Two years later he returned to the carriage business remaining in that field until 1909 when General Motors called him to Detroit and placed him in charge of the Welch-Detroit Motor Company.

In 1912 he organized the Little Motor Car Company of Flint which was later merged with Mason Motor Company and the Chevrolet Motor Company, Mr. Hardy becoming vice-president of the General Motors and in 1921 was made head of the Olds Motor Works.

## "Wild Driving" Test Convinces

WASHINGTON, July 3.—A test designed to convince the motoring public that "wild driving" does not pay was conducted here this week by Traffic Director M. O. Eldridge in cooperation with a local newspaper.

Two automobiles were used in the test which started in the northwest residential section and ended in the heart of the business district, a distance of three and three-fourth miles.

Only two and three-fourths minutes were saved by the car which violated 50 traffic regulations on the brief trip over the other which started at the same time and came down through the morning traffic observing every regulation.

### NEW GARDNER DEALERS

ST. LOUIS, July 6.—Following are new dealers added to the organization of the Gardner Motor Co., Inc., of St. Louis: Damrow & McIlhattan, Spencer, Wis.; N. F. String, Lemoyne, Pa.; J. E. Sides Motor Co., Corpus Christi, Tex.; Ralph B. Munson, Burlington, Vt.; Joseph LaBreck, Auburn, N. Y.; F. M. Bauer Motor Co., Elyria, O.; Irving A. Halpern, New York City.

E. R. Isaacson, Sister Bay, Wis.; Peterson, Nev.; W. S. Guy Motor Sales, Everett, Wash.; A. I. Hibbard, Jr., Buffalo, N. Y.; Phillips Garage, Minneapolis, Minn.; Mr. Chas. L. Smith, Olean, N. Y.

## 25 Years Ago In the Automobile Industry As Recorded In MOTOR AGE

(From MOTOR AGE, July 12, 1900)

### American De Dion Company

NEW YORK, July 9.—With the return of C. J. Field from abroad comes the announcement that an American company with large capital and ample facilities will have the complete United States business of the De Dion-Bouton Co. of France for their motors and "motorettes," as the new company designates their light vehicles, corresponding to the French "voitures."

The new company will be known as the De Dion-Bouton Motorette Co., and will have its offices and factory in New York. They will immediately put on the market motors, motorcycles and motorettes of the type of the French De Dion-Bouton, with some modifications in details to suit American demands.

### Anent the Foreign Makers

NEW YORK, July 9.—Whitney Lyon, who with President Chamberlain founded the Automobile Club of America, has returned from Europe.

He says that while the French turn out the fastest racing machines, they pay little attention to the aesthetics in their motor vehicles and they are far behind us in beauty of finish and design. He

## Preliminary Estimates Place June Output at 400,000

### Best Former Mark Was 386,539 in Same Month of 1923

DETROIT, July 3.—Preliminary estimates for the automobile production for June gathered from shipments made from the various factories place it at slightly less than 400,000, although it will set a new all time record for June output. The best past production mark was made in June 1923 when 386,539 cars and trucks were manufactured in the United States and Canada. Of this number approximately 12,000 were produced in Canada.

In local automotive circles, it is expected that the July production will be below that of June but that in August the sales and production will show a distinct increase.

Lessening in the June production has been caused by the slackening of the output by factories given to yearly models. With new models scheduled to come out within the next 45 days, these factories are not expected to resume full manufacturing schedules until after their models have been presented to the public.

Some of the factories are experiencing an exceedingly brisk demand and are still at capacity production. Closed cars continue to rule heavy favorites.

thinks the British are making the greatest practical progress of all the foreign makers.

### Open Air Automobile Show

NEW YORK, July 9.—E. E. Schwarzkopf, manager of the automobile show and races at the Greater Inter State Fair at Trenton, September 24-29, says that fully two-thirds of the 30,000 sq. feet set apart in building No. 3 for the motor vehicle exhibit has been already engaged. No charge is made for spaces for exhibition of automobiles and accessories, but all applications must be filed with M. R. Margerum, secretary Greater Inter State Fair Association, Trenton, N. J., before July 15.

### Madison Square Show

NEW YORK, July 9.—Official allotment has been made on the main floor of all the spaces save two for the show of the Automobile Club of America, at Madison Square Garden, November 3-10. These two will probably be allotted to the Waltham Manufacturing Co. and the American Electric Vehicle Co. A track for moving exhibition purposes encircles the floor and within this are the vehicle exhibits.





# Along Automobile Row



**COLUMBUS, O.**—P. W. Frye and H. W. Curtin have formed the Curtin-Frye Motor Co., to handle Hudson and Essex cars as dealers.

**ROCKFORD, Ill.**—The commercial Credit Trust, financing automobile purchases and with a capital stock of \$18,250,000, has appointed Ira L. Bell, pioneer automobile dealer as its branch manager in the office just opened here.

**JEFFERSON CITY, Mo.**—The Heisinger Motor Company has been appointed agents for the Hudson and Essex Motor cars.

**DALLAS, TEXAS.**—The Ferguson Motors Company, new distributors for the Hudson-Essex lines in the Dallas territory have taken a ten-year lease on a two-story building at 2210 Pacific Avenue.

**AKRON, O.**—The Mueller Steam Bus Co., has been incorporated with a \$50,000 capital to manufacture and deal in automotive busses.

**ST. LOUIS, Mo.**—A new used car showroom has been opened at 3026-28 Locust Street by the St. Louis County Automobile Company to handle Willys-Knight, Overland and the Studebaker in Clayton.

**INDEPENDENCE, Mo.**—The Curran Motor Co., distributors for Velie Motor Cars, has moved to its headquarters from this city to 2425 McGee Trafficway, Kansas City.

**DALLAS, Texas.**—F. E. McLarty, president of the Nash-McLarty Motor Company, distributors for Nash and Ajax cars in the Dallas territory has established a branch house in Oak Cliff, a suburb of Dallas containing a population of more than 50,000.

**BOSTON.**—The Y. D. Service Garages, Inc., of Boston has just completed arrangements to have erected in Worcester a 500-car garage, to be known as the Y. D. Worcester Garage.

**NEW ORLEANS.**—The New Orleans Flint Company, factory branch of the Flint Motor Company has removed from its temporary quarters on St. Charles Street to a building with better display facilities at 845-847 Carondelet Street.

**PHILADELPHIA.**—The Pioneer Storage Battery Company, manufacturers of the Pioneer automobile and radio batteries, will move from 244 North 15th Street to a larger plant at 1341-43-45-47 Brandywine Street, Philadelphia on July 15th.

**ST. LOUIS.**—A new building erected at a cost of approximately \$250,000 has been opened by the Franklin Motor Car Co. of Missouri, Franklin distributors in the St. Louis district.

**CHICAGO.**—George E. Sherman & Co., Inc. authorized Ford dealers formerly located at 2246 West Chicago Avenue, has moved to larger quarters at 1725 West Division Street.

**DAYTON, O.**—The Auburn Auto Sales Co., has been chartered with an authorized capital of \$10,000 to manufacture and deal in auto parts, accessories and motor vehicles.

**LOUISVILLE.**—The Broadway Motor Sales Company, Chevrolet dealers, have moved from 849 South Third Street to Brook and Broadway. The new location was formerly occupied by the wholesale branch of the Chevrolet Motor Company which has been moved to the Inter Southern Building.

**LOS ANGELES.**—E. E. Booth, wholesale sales manager for the Paige Company of Southern California, announces the appointment of the following three new city dealers: H. A. Hogue, at 4021 South Western Avenue; Camp Motor Company, 116 North Western Avenue; Mutual Motors Company, 1047 South Grand Avenue.

**DETROIT.**—Joseph J. Riley formerly connected with Riley and Worden, Inc., has relinquished that connection to join the D. E. Meyer Co., Hupmobile and Flint dealers in the Detroit district, as sales manager.

**MILWAUKEE.**—The McGadzen-Doering Motor Co. has been organized at West Allis, Wis., to conduct a general sales business in autos and parts.

**PORTLAND, Ore.**—Charles H. Mead, well known to the automobile trade of Portland, for the last twenty years, has joined the executive force of the Braley Auto Company, Franklin distributors in Oregon.

**FREEMONT, Ill.**—Edgar C. Eels of Freeport has purchased the Freeport Paige-Jewett agency from Dexter Stocking of Rochelle and possession was given on July 1. The Palace garage will continue as the headquarters of the agency.

**CINCINNATI.**—The Mitchell Avenue Buick Co. is a new company which has been formed in St. Bernard, Ohio, a suburb of Cincinnati, to open a sales and service station to handle Buick cars.

**DETROIT.**—One of the best known dealer firms in Detroit, Lewis Brothers, Inc., is announced as a new member of the Hudson-Essex selling organization by Aaron DeRoy Motor Car Company.

**LOS ANGELES.**—McKemmy Smith has sold out his interests in his Moon dealership in Long Beach and has accepted the appointment of wholesale manager of Don P. Smith, Los Angeles, Southern California Moon distributors.

**DES MOINES, Ia.**—Harry E. Hitzel, Cleveland, Ohio, for three years with the service department of the Chandler factory, has become service superintendent for the Gibson Motor Company, local distributors for the Chandler and Cleveland cars.

**NEW ORLEANS.**—Paul H. Maloney, candidate for mayor of New Orleans in the last primary, and until recently commissioner of public utilities of the city of New Orleans is now Hudson-Essex distributor in this territory.

**CHICAGO.**—Earl B. Bough, mechanical transportation engineer of Chicago, has been appointed special district sales manager of the middle west and western states by the Standard Motor Truck Company. His headquarters will be in Chicago.

**MOLINE, ILL.**—L. J. Brady, for 13 years connected with the Velie Motors Corporation and for the last two years a member of the Dean Motor company organization, has purchased the Five Points Garage in Moline, and will take active charge of the business.

**SPRINGFIELD, MASS.**—H. A. Hannum has been appointed general manager of the Moon Company of Springfield, Moon distributors and retailers. He formerly conducted the Sanford Street Garage in that city.

**MEMPHIS, TENN.**—Plans and specifications are being prepared for a building to be occupied by the Mack International Motor Truck Corporation, 672 Madison avenue.

**LOUISVILLE.**—Leo W. Kummert, well known to the Louisville automotive trade has joined with Douglas M. David in forming the David-Kummert Motor Company, direct factory dealers for the Overland and Willys-Knight in Louisville.

**BOSTON.**—Russell Burnett, for the past 10 years a member of the firm of Burnett & Sherman, Boston distributors for the Ford and later the Lincoln, has sold out his interest in that company and bought the Pilgrim Motor Company of Somerville.

**MILWAUKEE.**—Appointment of the Entringer Motor Co., Fond du Lac, Wis., as retail representatives for Gardner Motor Co. has just been announced. The company already handles the Chrysler and Maxwell cars.

**MARION, Ill.**—The Bracy-Kingsland Motor Company has been organized here with capital stock of \$40,000. A garage has been opened at 512 West Main Street, and motor cars, trucks and tractor will be distributed.

**WASHINGTON, C. H., Ohio.**—The H. & E. Motor is the name of a new automobile concern recently chartered with a \$15,000 capital to buy and sell autos, parts and accessories.

**LOS ANGELES.**—Walter E. Elbe, distributor for the Cunningham car for the state of California, announces the appointment of J. W. Culver as sales manager. Culver was formerly sales manager for the Lafayette Motors at Chicago and more recently was connected with the Lincoln agency in San Francisco.

**CINCINNATI.**—Wilbur H. Rechlin, former sales manager for the Herschede Motor Car Co., Cincinnati, has been named general manager of the Hodde Motor Co., Cincinnati, which is opening a new downtown agency to handle Star and Durant cars.

**DETROIT.**—The Weisman Motor Sales Company, 3639 Woodward Avenue has just opened up a new model accessory salesroom and service station in connection with its Woodward Avenue sales store.

**ST. LOUIS.**—The Yellow Drive-It-Yourself System, Inc., has opened its new building at 3524 Washington Boulevard. E. L. Hudson, vice president and general manager of the company has arrived from Chicago to take charge.

**DETROIT.**—Distribution of the Franklin cars in the Detroit territory has been placed in the hands of the Franklin-Michigan Co., headed by Charles Koerber and George Zuver as sales manager.

**CLEVELAND, Ohio.**—Papers have been filed with the secretary of state, chartering the Meinert Magneto Co., with a \$25,000 capital to do a retail auto equipment business.

**DAYTON, Ohio.**—Papers have been filed with the secretary of state, chartering the Daytonia Garage Co., with an authorized capital of \$5,000. The company was formed for the purpose of dealing in autos, parts and accessories as well as operating a general automobile garage.

**LOS ANGELES.**—The latest expansion along Los Angeles' Automobile Row was the formal opening recently of the new showrooms and service quarters of Mutual Motors, Inc., Southern California distributors of the Roamer and Gray cars and retail Paige and Jewett dealers.

**MILWAUKEE.**—Andrew H. Dahl, for the past fifteen years operator of the A. H. Dahl Co. of Kenosha, Wis., Ford dealers, has turned over active management of the business to Aad J. Dahl and Victor H. Dahl, his sons.

**LOS ANGELES.**—The new home of the factory branch of the Mack Motor Truck Company, is now nearing completion and will be one of the largest buildings in the truck distributing field in the United States.

**NEWARK, O.**—The Phalen & Cunningham Co., has been chartered with an authorized capital of \$50,000 to deal in automobiles and accessories as an agency.

**MILWAUKEE.**—Formation of the R. H. Churchill Co. to deal in automobiles, machinery and accessories has been announced at Marinette, Wis.

## With the Associations

### Boston Dealers Elect

BOSTON, July 6.—The annual meeting and election of officers of the Boston Automobile Dealers' Association was held this week at which President John H. MacAlman presided. A report of the show committee stated that the annual exhibition held last March was very successful financially and the attendance was very successful financially and the attendance was very good. Also that the plan tried out of not having dealer tickets and reducing the admission from 75 cents, that called for payment of a war tax to 50 cents thereby eliminating such a tax, was worth continuing.

The election of officers followed. President John H. MacAlman was re-elected. John W. Bowman was moved up from treasurer to vice president, while F. A. Hinchcliffe, formerly treasurer, was requested to fill that position again. Chester I. Campbell was re-elected secretary and manager of the shows.

President MacAlman is Stearns distributor for New England. Mr. Bowman handles Marmon, while Mr. Hinchcliffe is Jordan dealer.

The directors chosen in addition to the above were Charles E. Fay (Chrysler); Joseph S. Donovan (Studebaker); Albion L. Danforth (Cadillac); Otto A. Lawton (Franklin); John H. Johnson (Buick); C. P. Rockwell (Nash); George B. Kimball (Hudson-Essex) and W. C. Sills (Chevrolet). All except Mr. Lawton were re-elections.

### Speaks on Service

LOS ANGELES.—T. A. La Belle, of the Pan American Oil Company, and Ethelbert Favary, of the Moreland Truck Company, were the featured speakers at the monthly meeting of the Service Managers Association of Los Angeles. J. H. Frost of the Don Lee Company, Cadillac contributors, was the chairman of the evening. La Belle spoke on "Service," and Favary on "Brakes and Fiction."

### Dealers' Association Formed

SPRINGFIELD, Mass., July 6.—The Hudson and Essex Associated Metropolitan Dealers' Association is being formed here, having its first regular meeting today. Bi-weekly meetings will be conducted in conjunction with the retail department of J. S. Harrington, Inc., Hudson and Essex distributors here.

A membership fee of \$100 a year is imposed, with a rebate of \$2.50 for each meeting the member attends during the year. Harry W. Stacy, secretary of the Automotive Dealers' Association, has been chosen secretary of the new organization.

The members will take part in the annual clambaker of J. S. Harrington, Inc., and the Harrington-Hudson Co. of Hartford, Aug. 5. This will be attended by approximately 1,200 persons, or twice as many as last year.

### Plan National Organization

SPRINGFIELD, Ill., July 3.—Initial steps in the organization of a national association of "Drivurself" agency owners, have been taken here. Officers were elected as follows: President, B. H. Smith, Springfield; vice-president, E. J. Slevin, Moline; secretary-treasurer, R. C. Harding, East St. Louis; directors, Hugh Robb, Bloomington; John F. O'Byrne, Champaign; Edward E. Van Huffel, Galesburg; and R. C. Daugherty, Danville.

A manager-secretary was chosen in the person of H. C. Bradfield, Chicago, who will devote his time to expanding the organization.

The object of the association is to secure greater protection to rent-a-car concerns, and also to exchange experiences and ideas in order to promote the welfare of the membership. Rental companies in every state will be urged to affiliate.

### Ohio Plans Shaped

COLUMBUS, O.—July 3.—Plans are already being shaped up by the officers and directors of the Ohio State Automobile Association, following the recent annual convention, for a year of militancy in taxation, highway improvement, and safety activities, with special emphasis on preparations for entering the legislative arena in a more aggressive and effective way than ever before.

This statement came from Secretary Chas. C. Janes, with the announcement that the first meeting of the association officials would be called soon to organize for the year's work.

Retiring as president of the Ohio State Automobile Association after three years spent as leader in organizing Ohio motorists as the most powerful body of its kind in the world, Fred H. Caley sounded this keynote for the future.

At the annual convention, delegates representing 150,000 organized motorists re-affirmed the association's opposition to the gasoline tax in addition to other motor vehicle taxation, and voted unanimously to consolidate their resources politically in the interest of motor vehicle owners.

Secretary Janes announced that during the year the only five counties of the state not now represented in the Ohio State Automobile Association would be made the scene of special organization activities.

### Texas Body Elects

CORPUS CHRISTI, Texas, July 3.—George F. Holden, president of the Crockett Automobile Company, was elected president of the Corpus Christi Auto Trades Association at the recent annual meeting of the organization. R. M. Yantis was named vice-president and C. V. Twyman secretary and treasurer.

### St. Louis Wins Honors

ST. LOUIS, July 6.—The St. Louis district office of the White Truck Co. received the bronze plaque awarded it in a recent nation-wide sales contest, at a banquet at Hotel Chase last week. Vice-president George F. Russell in charge of the western region made the presentation.

Stanley P. Seward, advertising manager of the White Co., and his assistant, Charles E. Oswald, came to St. Louis for the dinner as did Vice-president Saunders Jones from Atlanta, Ga.

### Reward Is Offered

PORTLAND, Ore., July 6.—At the regular monthly meeting of the Oregon State Motor Association a resolution was adopted offering a reward of \$100 for information leading to the arrest and conviction of any driver of a motor vehicle who causes the death of one or more persons on any street or highway of Oregon through an automobile accident, and fails to report such accident to the proper authorities.

### Tire Dealers Meet

ST. LOUIS, July 6.—The Cupples Co., acted as host to the members of the Associated Tire Dealers of St. Louis at a special meeting held last week at the Cupples Co. plant, Seventh and Spruce streets.

Bailey F. Kahl, tire sales manager, of the firm entertained the members before the meeting with a concert by the Rhino Cord Orchestra.

Kahl, who has just returned from a tour of the east, spoke on the prospects of the tire business in the immediate future. He discussed the great advance in the price of crude rubber and said it seemed Great Britain was largely responsible because of the export measure she imposed on her colonies which produced the preponderance of the supply of crude rubber.

### Consider Rubber Problem

LOS ANGELES, July 6.—C. R. McCoslin, sales manager of the Los Angeles factory branch of the Firestone Tire & Rubber Company, was the principal speaker at the monthly meeting of the Automobile Sales Managers Association held at the Los Angeles Athletic Club. Thomas Duggan, Los Angeles, sales manager of Chamber & Lyon, automotive jobber, spoke on "The Spark Plug."

The general subject for discussion at the meeting was on "Market Analysis," and was led by H. C. McVey, passenger car sales manager of William E. Bush, Inc., Pierce Arrow distributor; D. W. Ferguson, sales manager, Reo Motor Car Company of California, and J. L. Dixon, of the J. V. Baldwin Company, Chevrolet dealer.



## Rim and Wheel Distributors Organize to Protect Dealer

### Standardization of Service Methods and Catalogs Is Association's Plan

NEW YORK, July 3.—Organization of the Rim and Wheel Distributors Association, recently accomplished at a convention in the Morrison Hotel, Chicago, brings together, for purposes of cooperation and standardization, seven of the largest rim and wheel distributing concerns in the country, doing an annual business representing several millions of dollars.

Standardization of service methods and catalogs, and protection against the sale of surplus stocks thrown on the market when manufacturers change rim and wheel types and sizes, are the chief purposes of the association, as described by John F. Creamer, manager of Wheels, Inc., New York City. Mr. Creamer is a director of the association and the officers are:

President, Charles Fields, Motor Industries Corp., Kansas City; vice president, Robert Nierman, Motor Rim Manufacturing Co., Cleveland; secretary-treasurer, Charles A. Sartain, Motor Rim and Wheel Co., Chicago.

Mr. Creamer said that the Association is composed of distributor representatives of these seven wheel and rim manufacturers:

Motor Wheel Corp., Lansing; Firestone Steel Products Co., Akron, O.; Kelsey Wheel Co., Detroit; Jackson Steel Products Co., Jackson, Mich.; Hays Wheel Co., Jackson; Motor Wheel Corp. of America, Buffalo, and Budd Wheel Co., Philadelphia.

### OFFERS PREFERRED STOCK

MONTREAL, July 6.—The Yellow Cab Company of Montreal, Ltd., operating a taxicab transportation business in this city, is offering for public subscription \$100,000 of its 7 per cent cumulative preferred stock at par, carrying a bonus of 25 per cent in common stock. The authorized capitalization of the company consists of \$750,000 preferred stock divided into 7,500 shares of the par value of \$100 each, and \$250,000 of common stock divided into 50,000 shares of the par value of \$5 each. The entire amount of common stock and \$368,300 of preferred has so far been issued.

## Night Air Mail Between Chicago and N. Y. Started

WASHINGTON, July 2.—The Post Office Department last midnight began the operation of an overnight air mail service between New York and Chicago, further reducing the mailing time between those centers.

The rate for the service has been fixed at ten cents for each ounce or fraction of an ounce. The charge includes not only transportation by air, transportation

## Automobile Shows

Boston ..... Oct. 10-17  
World's Rubber and Tropical Exposition.

Dallas, Tex. .... Oct. 10-25  
Annual Automobile Show, State Fair Automobile Building, under the auspices of the Dallas Automotive Trade Association. J. W. Connell, manager.

De Pere, Wis. .... Aug. 31-Sept. 21  
Annual Automobile Show under the auspices of the Automobile Division of the Green Bay Association of Commerce.

Fresno, Cal. .... Sept. 28-Oct. 3  
Fresno Motor Car Dealers Association. Fifteenth Annual Show in connection with Fresno District Fair.

Grand Rapids, Mich. .... Sept. 7-12  
Grand Rapids Automobile Dealers Association, Seventh Annual Show in connection with West Michigan Fair, Wm. T. Morrissey, manager.

Oklahoma City, Okla. .... Sept. 26-Oct. 3  
Annual State Fair and Exposition. Passenger cars and accessories.

Sacramento, Cal. .... Sept. 5-13  
Automobile Exhibits in Diamond Jubilee State Fair.

Shreveport, La. .... Oct. 24-Nov. 8  
Twentieth Annual State Fair showing passenger cars, trucks and tractors.

New York ..... Nov. 15-21  
Twenty-first Annual Automobile Salon.

Wheeling W. Va. .... Sept. 7-12  
Wheeling Automobile Dealers Association, Eleventh Annual State Fair, Exposition Building.

White River Junction, Vt. .... Sept. 15-18  
Nineteenth Annual Twin State Fair. Passenger cars, trucks and accessories. F. L. Davis, manager.

Chicago ..... Jan. 30-Feb. 6  
Twenty-sixth Annual National Automobile Show and Eleventh Annual Automobile Salon.

Danbury, Conn. .... Oct. 5-10  
Eight annual fair, Danbury Fair Auto Building, under direction of Danbury Agricultural Society, passenger cars, trucks, tractors, accessories, etc. H. Lage, manager.

Boston ..... Oct. 10-17  
World's Rubber and Tropical Exposition, Mechanics Hall, Chester I. Campbell, manager.

Chicago ..... Sept. 28-Oct. 3  
Fourteenth annual Safety Congress and Exhibit, Rainbow Room, Hotel Winton, under direction of National Safety Council, A. M. Smith, business manager.

Salt Lake City ..... Oct. 1-7  
Third annual Automobile Show and forty-seventh annual State Fair in Coliseum Building, Wm. D. Sutton, supervisor of Automobile Show.

to and from the air mail route, but beyond as far as two-cent postage will carry the ordinary letter.

The Post Office Department reminds that every envelope should be prominently endorsed "Via Night Air Mail." Any mailable matter may be sent by air, including parcels up to 50 pounds in

# Coming Motor Events

## Foreign Shows

Berlin, Germany ..... Nov. 26-Dec. 6  
Annual Automobile Show in the Kaiserdamm.

Buenos Aires, Argentina ..... Oct. 3-13  
Pan-American Road Congress.

London, England ..... Oct. 8-17  
Olympia Passenger Car Show.

London, England ..... Oct. 29-Nov. 7  
Annual Truck Show.

## Races

Altoona, Pa. .... Sept. 7

Charlotte, N. C. .... Oct. 24

Fresno, Cal. .... Sept. 30

Laurel, Md. .... Oct. 10  
A. A. A. Race, Baltimore-Washington Speedway.

Los Angeles, Cal. .... Nov. 26

Monza, Italy ..... Sept. 6  
Italian Grand Prix Race.

Paris Montlhery track ..... July 26  
French Grand Prix.

## Conventions

Buenos Aires, Argentine ..... Oct. 3-13  
Pan-American Road Congress.

Cleveland ..... Sept. 14-19  
Annual Convention and Exposition of American Society for Steel Treating.

Cleveland ..... Sept. 15-16  
S. A. E. production meeting and exhibition.

Des Moines, Ia. .... Nov. 12-13  
Automotive Merchants' Association Convention.

Everett, Wash. .... Aug. 3-4  
Annual state convention Washington Automotive Trades Association.

Montreal, Que. .... Oct. 7-10  
Fall convention of the Motor and Accessory Manufacturers Association.

Philadelphia ..... September  
S. A. E. Automotive Transportation meeting.

Pittsburgh, Pa. .... Oct. 12-14  
Pennsylvania Automotive Association Convention.

St. Louis ..... Nov. 17-19  
Annual Convention of National Tire Dealers' Association.

Tuscaloosa, Ala. .... July 20-21  
Midsummer meeting of the Alabama Automotive Trades Association.

weight and not exceeding 84 inches in length and girth combined.

Air mail may be insured, registered and sent special delivery. Air mail letters, mailed in New York or Chicago at the close of the business day will be delivered in Chicago or New York on the first carrier run the following morning.

## Automobile Tires and Tubes Increase in Price 10-15 Pct.

### Goodyear, Miller and General Lead Advance Caused by Rise of Crude

AKRON, O., July 3.—Most of the leading rubber manufacturers put into effect this week increases of about 10 to 15 per cent in prices of automobile tires and inner tubes. Ford size balloon tires are boosted slightly less than other casings.

Official announcements of price revisions are made by the Goodyear Tire and Rubber Co., Miller Rubber Co., and General Tire and Rubber Co. Other companies are preparing revised lists to become effective at once.

Tube prices are boosted 33 1/3 marking one of the largest single revisions in the history of the industry by General, but this company's schedules have been out of line with its competitors. This is the third General tire advance to be made within the past three months, due to the 300 per cent rise in the crude rubber market since the first of the year.

The British restriction act has been largely blamed for forcing up the cost of the raw material, but the unexpected heavy production of tires this year also helped to deplete stocks and create a temporary shortage of rubber. Spot rubber sold early this week at 90 cents a pound, compared with 17 cents last year. The market eased off below 85 cents later in the week.

Goodyear officials express the opinion in a statement tonight that the abnormal high rubber prices will not continue indefinitely. They indicate also that the manufacturers are absorbing part of the higher cost of crude rubber, rather than pass it all on to the consumer.

## Huntington Dealers Start "Buy-New-Car" Campaign

HUNTINGTON, W. Va., July 6.—Twenty automobile dealers in the city of Huntington launched a "Buy a New Car This Year" campaign on July 1 and will continue it throughout the month of July. The campaign was decided upon at a meeting of dealers held recently. It will not be strictly under the auspices of the Huntington Automobile Dealers Association, but will be sponsored by at least 20 dealers. The plan is to make the slogan of the campaign a by-word on the lips of all Huntington citizens throughout the remainder of the year.

At noon on Saturday, July 11, the dealers co-operating in the plan will hold an automobile parade throughout the city and adjoining towns to help put the idea over. All cars will carry banners and all of the dealers' places of business will be decorated to fit the occasion. The idea is to bring home to prospective automobile buyers that this is the opportune time to buy a new car.

The dealers joining in the plan are the Huntington Motor Co., Max Biederman, Motor Car & Truck Corp., Huntington



### THE WAY IT GOES



Sam: "Where were yu las' night?"

Doc: "May and I went coupeying."

Sam: "Big time, I suppose?"

Doc: "Fair. May did the cooing and I did the paying!"

—Tennessee Mugwump.

### Certainly Not

Said the bank teller to the new girl who was making a deposit: "You didn't foot it up."

"No," she replied innocently, "I took a taxi."

—The Philomath, Framingham, Mass.

### Conscientious

During a recent rainy Sunday a devout member of the Motor Club who was attending church over his radio, inadvertently leaned forward and dropped a coin in his hat when the minister broadcast, "Let Your Light So Shine."

—The Road.

Still, if you slow down to enjoy the scenery, passing cars will make you eat it.

—Quincy Whig-Journal.

Buick Co., Ike Hanley, Hopkins Motor Co., Reo Cavendish Co., Nash Motor Sales Co., Magann Motors, Haan Sales & Service Co., Overland Knight Co., Curtis Motor Co., Connolly Motor Co., Lexington Sales & Service Co., Acme Motor Co., Jones Motor Co., Tri-State Motor Co., Motor Sales Co., Motor Transport Co., and Bruce Perry Motor Co.

### OREGON SEES DIANA

PORTLAND, Ore., July 3.—The premier showing of the Diana eight-in-line in the northwest was held in the Condit & Conser Company's showrooms. This company as distributors have appointed the following Oregon dealers for their line: Salem Auto Company; Salem, Oregon; Freewater Auto Co., Freewater, Ore.; Bowman Auto Co., Marshfield, Ore.; Terminal Auto Co., Eugene, Ore. and Robin Reed, Corvallis, Ore.

### TRY THIS

Cop: "Why didn't you stop when I yelled back there?"

Driver (great presence of mind): "I thought you said, 'Hello, Senator?'"

Cop: "Well, you see, Senator, I was going to warn you about going too fast in the next town."

—Middlebury Blue Baboon.

### TAKING NO CHANCES

Sheriff: "What do you mean by driving through this village at over sixty miles an hour?"

Fair Motorist: "Well, you see, my brakes have gone wrong, and I was hurrying home before I had an accident!"

—Exchange.

### ALL DEPENDS

What kind of car do you drive?

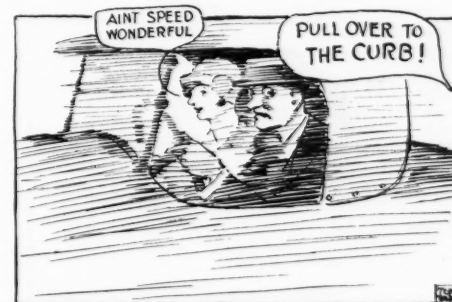
Any of several.

Any of several?

Yes. You see, I have several friends.

—Johns Hopkins Black & Blue Jay.

### TICKET, PLEASE



The saddest words of tongue or pen, Are NOT, by heck, "It might have been." Much sadder is the cop's rude blurb—"Hi there, pull over to the curb!"

—Fordowner.

### APPERSON SALES SET RECORD

KOKOMO, Ind., July 6.—Sales and deliveries of Apperson cars for the month of June exceeded those of the previous month by a considerable margin, according to an announcement made by Don C. McCord, president. This brings the total for the first half of 1925 to the highest figure in the firm's 33 years of manufacturing experience. The president stated that he believes the fact that the company's June business was bigger than that of May sets a precedent in the industry. His announcement also said that the company has on hand "the largest total of unfilled orders since March 1."

McCord states that the concern is in the strongest position in years and that it plans to produce 100 per cent more cars during the last half of the year than it did during the first six months.



## Prices and Weights of Current Passenger Car Models

SHIP.

WT. PASS. BODY STYLE. PRICE

AJAX

2210 5-p Touring \$865

2410 5-p Sedan 995

ANDERSON "41"

2650 5-p Touring \$1,195

2675 4-p Sp. Touring 1,445

2925 2-p Coupe 1,425

2875 5-p Sedan 1,695

2925 5-p Sp. Sedan 1,895

2975 7-p Touring 1,595

3200 7-p Sedan 1,945

APPERSON "6"

1100 5-p Phaeton \$1,575

1100 5-p Sp. Phaeton 1,650

1145 5-p Coupe 2,050

1470 5-p Sp. Sedan 2,100

1470 5-p Brougham 2,050

5-p Sp. Phaeton 1,995

3-p Coupe 2,450

4-p Brougham 2,450

5-p Sedan 2,595

AUBURN "A"

5-p Touring \$795

6-p Roadster 1,495

5-p Brougham 1,595

5-p Sedan 1,795

8-88

6-p Roadster 1,975

4-p Sport Roadster 1,975

4-p Club Roadster 2,075

4-p Sport Brougham 2,350

5-p Sedan 2,350

BARLEY "6" 6-50

2750 5-p Touring \$1,395

2800 5-p Sp. Touring 1,495

3100 5-p Sedan 1,850

3150 5-p Sp. Sedan 2,250

BUICK "Standard"

2750 2-p Roadster \$1,150

2920 5-p Touring 1,175

2960 2-p Coupe 1,375

3075 4-p Coupe 1,565

3185 5-p Dbl. Srv. Sedan 1,475

3245 5-p Sedan 1,665

3050 5-p Coach 1,295

Master

120 in. W. B.

3285 2-p Roadster 1,365

3465 5-p Touring 1,395

3850 5-p Sedan 2,225

3560 5-p Coach 1,495

128 in. W. B.

3485 3-p Sp. Roadster 1,750

3550 5-p Sp. Touring 1,800

3610 7-p Touring 1,625

3745 3-p Country Club 2,075

3770 4-p Coupe 2,125

3905 5-p Brougham Sedan 2,350

4030 7-p Limousine 2,525

3995 7-p Sedan 2,425

3850 7-p Town Car 2,925

CADILLAC "V-63 Standard Line"

4190 2-p Roadster \$3,185

4280 7-p Touring 3,185

4200 4-p Phaeton 3,185

4240 5-p Coach 3,185

4610 7-p Sedan 3,885

4625 5-p Landau 3,885

4655 7-p Std. Imperial 4,010

Custom Buick

132 in.

4260 2-p Coupe (138 in.) 3,975

4400 5-p Coupe 4,350

4490 5-p Sedan 4,550

4590 7-p Suburban 4,650

4655 7-p Imp. Suburban 4,950

CASE J. I. C.

3260 3-p Roadster \$1,840

3290 5-p Touring 1,885

3470 5-p Sp. Touring 2,160

3570 4-p Sub. Coupe 2,480

3640 5-p Sedan 2,590

3650 5-p Brougham 2,590

X

3020 3-p Roadster 1,570

3050 5-p Touring 1,595

3380 5-p Sub. Coupe 2,290

3380 5-p Victoria 2,290

3400 5-p Sedan 2,385

Y

3950 7-p Touring 2,225

4820 7-p Sedan 2,975

CHANDLER "SS"

3090 2-p Roadster \$1,795

3182 4-p Roadster 1,785

3034 5-p Touring 1,595

3923 7-p Touring 1,785

3248 4-p Royal Dispatch 1,885

3309 5-p Coach \$1,595

SHIP.

WT. PASS. BODY STYLE. PRICE

CHANDLER (Cont'd)

3309 5-p Chummy Sedan 2,045

3469 5-p Met. Sedan 2,195

3428 5-p Sedan 4 d. 1,995

3521 7-p Sedan 2,195

3598 7-p Limousine 3,095

CHEVROLET "Superior" (Series K)

1755 2-p Roadster \$525

1870 5-p Touring 525

2015 2-p Utility Coupe 715

2110 5-p Coach 735

2220 5-p Sedan 825

CHRYSLER "Four" (109 in. W. B.)

5-p Touring \$895

2-p Club Coupe 995

5-p Coach 1,045

5-p Std. Sedan 1,095

Six 112 3/4 in. W. B.

2805 4-p Roadster \$1,625

2730 5-p Touring 1,395

2785 5-p Phaeton 1,495

5-p Coach 1,545

2935 4-p Coupe 1,895

2935 4-p Brougham 1,895

3060 5-p Sedan 1,825

3085 5-p Imperial Sedan 2,065

3090 5-p Crown Sedan 2,195

118 3/4 in. W. B.

3225 5-p Town Car 3,725

CLEVELAND "31"

2325 5-p Touring \$ 895

2580 5-p Sedan 1,195

48

2750 5-p Touring 1,095

2810 5-p Touring De Luxe 1,195

2910 5-p Sp. Touring 1,295

3000 5-p Coach 1,295

3040 5-p Sedan 1,495

3190 5-p Sedan De Luxe 1,695

3190 5-p Sport 1,725

2990 5-p Brougham 1,545

COLE "MASTER"

3675 4-p Volante Touring \$2,325

3795 7-p West. Touring 2,325

3675 4-p Aero-Vol. Tour. 2,475

4055 5-p Brouette Sedan 3,225

4000 7-p Royal Sedan 3,225

4100 7-p Royal Limousine 3,825

CUNNINGHAM "V-6"

4600 7-p Touring \$6,300

4500 4-p Sp. Touring 5,800

4700 4-p Coupe 7,150

5000 6-p Limousine 7,650

DAGMAR "6-70"

3750 4-p Roadster \$3,500

3500 4-p Sp. Tourer 3,500

3700 4-p Phaeton 3,500

4200 4-p Petite Coupe 4,500

4200 4-p Petite Sedan 4,500

4500 4-p De Luxe Coupe 4,750

4700 5-p Sedan 4,700

4800 7-p Sedan 4,750

6-60

3100 2-p Roadster 1,785

3200 4-p Sp. Touring 1,785

3150 5-p Touring 1,985

3400 2-p Coupe 2,345

3500 5-p Sedan 2,345

DAVIS "90"

2650 4-p M. o'War Road. \$1,495

2915 4-p Legionaire Tour. 1,495

2750 5-p Phaeton 1,895

5-p Sedan 1,595

3070 5-p Imperial Sedan 1,795

3065 5-p Berline Sedan 1,995

2700 5-p Brougham 1,595

91

2835 4-p Roadster 1,795

3020 5-p Phaeton 1,695

3050 5-p Brougham 1,895

5-p Sedan 1,895

3245 5-p Imperial Sedan 2,095

3215 5-p Berline Sedan 2,205

DIANA "St. 8"

5-p Roadster \$1,895

5-p Phaeton 1,895

5-p Std. Sedan 1,995

5-p De Luxe Sedan 2,195

5-p Cabriolet 2,095

5-p Brougham 2,095

DODGE BROTHERS

2473 2-p Roadster \$ 855

2593 2-p Special Roadster 955

2567 5-p Touring 885

2695 5-p Spec. Touring 985

2708 2-p Coupe "B" 995

2823 2-p Spec. Coupe "B" 1,095

2995 5-p "B" Sedan 1,095

3077 5-p Spec. "B" Sedan 1,195

3020 5-p Sedan A 1,245

3107 5-p Spec. "A" Sedan 1,330

2723 5-p Coach 1,095

2823 5-p Spec. Coach 1,195

SHIP.

WT. PASS. BODY STYLE. PRICE

DORRIS "6-80"

4120 4-p Pasadena Tour. \$4,150

4115 7-p Touring 4,150

4193 4-p Coupe 4,985

4200 5-p Sedan 5,550

4310 7-p Sedan 5,800

DUESENBERG

Straight "8"

3920 3-p Roadster \*\*

3700 5-p Phaeton \$6,650

3920 7-p Phaeton \*\*

3980 4-p Sp. Phaeton \*\*

4000 4-p Coupe \*\*

4050 5-p Sedan \*\*

4350 7-p Sedan \*\*

DU PONT "D"

3300 2-p Roadster \$2,600

3550 5-p Touring 2,600

3800 7-p Touring 2,750

3550 5-p Touring Sedan 3,400

DURANT A-22

2800 2-p Roadster \$1,080

2800 2-p Sp. Roadster 900

3225 5-p Touring 830

5-p Spec. Touring 950

2895 4-p Coupe 1,160

5-p Spec. Coupe 1,235

2505 5-p Sedan 1,190

5-p Spec. Sedan 1,310

2430 5-p Coach 1,050

5-p Spec. Coach 1,100

ELCAR "4-55"

5-p Touring \$1,095

5-p Coach 1,195

5-p Sedan 1,395

6-65

5-p Touring 1,295

5-p Coach 1,395

5-p Sedan 1,595

8-80

4-p Roadster 2,315

5-p Sp. Touring 2,165

7-p Sp. Touring 2,265

3000 3-p Coupe Roadster 2,815

5-p Sedan 2,265

4050 7-p Sedan 2,765

4000 5-p Brougham 2,865

ESSEX

2130 5-p Touring \$850

2395 5-p Coach 850

FLINT "55"

3325 4-p Sport Roadster \$1,950

3245 5-p Touring 1,595

3310 4-p Sp. Touring 2,050

3245 4-p Coupe 2,195

3595 5-p Sedan 2,285

3565 5-p Brougham 4 d. 2,735

40

2715 5-p Touring 1,285

2940 5-p Sedan 4 d. 1,680

2965 5-p Brougham 1,760

FORD

Without Starter and Dem. Rims

1369 2-p Runabout \$260

With Balloon Tires 305

1494 5-6 Touring 290

With Balloon Tires 335

With Starter and Dem. Rims

1521 2-p Runabout \$45

With Balloon Tires 370

1644 5-p Touring 375

With Balloon Tires 400

1749 2-p Coupe 520

With Balloon Tires 545

1882 5-p Sedan, Tudor 580

With Balloon Tires 605

1927 5-p Sedan, Fordor 660

With Balloon Tires 685

FRANKLIN "11-A"

2800 3-p Sport Roadster \$2,800

2845 5-p Touring 2,650

2965 3-p Coupe 2,700

3175 5-p Sedan \$3,200

3080 5-p Sport Sedan 3,350

3275 7-p Limousine 3,500

3135 7-p Cabriolet 4,400

GARDNER "Series 5"

2680 5-p Coupe \$1,275

2895 5-p Sedan 1,475

3070 5-p Sp. Sedan 1,595

6

3010 5-p Touring 1,395

3240 5-p Brougham 1,595

3310 5-p Sedan 1,795

5-p Sport Sedan 1,895

8

3350 5-p Touring 1,995

4-p Cabriolet 2,245

3510 5-p Brougham 1,995

3600 5-p Sedan 2,495

GRAY "O"

1750 5-p Touring \$630

1880 3-p Coupe 845

2020 5-p Sedan 895

2130 5-p Royal Sedan 975

SHIP.

WT. PASS. BODY STYLE. PRICE

HAYNES "60"

3295 5-p Touring \$1,609

3650 5-p Brougham 2,200

3765 5-p Sedan 2,300

HERTZ D-1

3360 5-p Sedan \$1,695

HUDSON "Super Six"

3425 7-p Phaeton \$1,250

3450 5-p Coach 1,250

3425 4-p Brougham 4 d. 1,595

3675 7-p Sedan 1,795

HUPMOBILE "R" 4

2595 2-p Roadster \$1,225

2705 5-p Touring 1,225

2760 2-p Coupe 1,350

2875 5-p Club Sedan 1,375

E

3050 2-p Roadster 1,795

3270 4-p Roadster 1,895

3135 5-p Touring 1,795

3295 2-p Coupe 2,095

3295 4-p Coupe 2,095

3410 5-p Sedan 2,195

JEWETT "23-25"

3025 4-p Roadster \$1,630

2835 5-p Touring 1,205

3015 5-p De Luxe Touring 1,320

2835 2-p Bus. Coupe 1,340

3025 5-p Sedan 1,580

3305 5-p De Luxe Sedan 1,780

3000 5-p Coach 1,260

JORDAN

Series "A"

3330 2-p Playboy Road. \$2,575

3340 5-p Touring 2,575

3450 3-p Friendly "3" 2,875

3625 5-p Brougham 2,875

3520 4-p Victoria 2,775

3525 5-p Sedan 2,975

3470 7-p Sedan 3,325

3800 7-p Suburban Sedan 3,375

KISSEL "55"

3130 2-p Speedster \$1,895

2000 2-p Sp'dster De Luxe 1,995

4-p Speedster 2,285

4-p Sp'dster De Luxe 2,285

3530 2-p Enc. Speedster 2,285

2000 2-p Enc. Sp'd'r DeL. 2,785

3190 4-p Tourster 1,895

4-p Tourster De L. 2,085

2980 5-p Phaeton 1,685

3170 5-p Phaeton De L. 1,885

7-p Touring 1,785

7-p Touring De L. 1,985

3430 4-p Coupe 2,185

4-p Coupe De Luxe 2,585

3540 5-p Brougham Sedan 2,250

5-p Broug. Sed. DeL. 2,685

5-p Brougham 2 d. 1,895

4070 7-p Sedan De Luxe 3,285

4010 7-p Berline Sed. DeL. 3,385

3530 5-p Victoria 2,285

5-p Victoria De Luxe 2,685

75

2000 2-p Speedster 2,195

2-p Speedster De L. 2,485

4-p Speedster 2,295

4-p Speedster De L. 2,585

2-p Speedster De L. 2,585

2-p Enc. Sp'd'r DeL. 2,985

4-p Tourster 2,195

4-p Tourster De L. 2,385

5-p Phaeton 1,985

5-p Phaeton De Luxe 2,185

7-p Touring 2,085

7-p Touring De Luxe 2,285

4-p Coupe 2,485

4-p Coupe De Luxe 2,885

5-p Brougham Sedan 2,550

5-p Broug. Sed. DeL. 2,985

5-p Brougham 2 d. 2,195

7-p Sedan De Luxe 3,485

7-p Berl. Sed. De L. 3,585

7-p Victoria 2,585

7-p Victoria De Luxe 2,985

LEXINGTON

Concord

5-p Touring \$1,595

5-p Touring (Enc.) 1,695

5-p Spec. Touring 1,795

5-p Sedan 2,185

5-p Spec. Sedan 2,445

Minute Man

2-p Roadster 2,145

5-p Touring 2,095

5-p Touring 2,195

7-p Touring 2,345

5-p Lark Touring 2,495

5-p Cal. Touring 2,495

7-p Cal. Touring 2,495

5-p Royal Coach 2,495

5-p Brougham 2,595

5-p Sedan 2,895

LINCOLN

4380 2-p Roadster \$4,000

4595 7-p Touring 4,000

\*\* Manufacturers do not quote list prices.

# Prices and Weights of Current Passenger Car Models

SHIP. WT. PASS. BODY STYLE. PRICE

LINCOLN (Cont'd)

4565	4-p	Phaeton	\$4,000
4565	4-p	Sport Touring	4,500
4655	4-p	Coupe	4,600
4775	4-p	Sedan	4,800
4825	5-p	Sedan	4,900
4865	7-p	Sedan	5,100
4945	7-p	Limousine	5,300

LOCOMOBILE "48"

5280	4-p	Sportif Tour	\$ 7,460
5330	7-p	Touring	7,460
5630	5-p	Victoria Sedan	10,050
5464	7-p	Brougham	10,040
5640	7-p	Touring Lim.	9,500
5868	7-p	Enc. Drive Lim.	10,050
5600	7-p	Cabriolet	10,300

"J-8"

.....	2-p	Roadster	2,150
.....	5-p	Touring	1,785
.....	5-p	Sedan	2,285
.....	5-p	Brougham	2,285

McFARLAN "6"

"SV"

3700	2-p	Roadster	\$2,650
.....	2-p	Spec. Roadster	2,900
3600	5-p	Touring	2,650
.....	7-p	Touring	2,750
.....	4-p	Coupe	3,180
3850	5-p	Sedan	3,180
.....	5-p	Spec. Sedan	3,180
3850	7-p	Sedan	3,280
.....	5-p	Sub. Sedan	3,380
.....	7-p	Sub. Sedan	3,480
.....	5-p	Brougham 4 d.	3,180

"TV"

4000	2-p	Roadster	5,400
4600	4-p	Sp. Touring	5,600
4900	4-p	Coupe	6,720
5200	4-p	Tour. Sedan	6,720
5200	7-p	Tour. Sedan	6,810
.....	6-p	Sedan	6,720
.....	7-p	Sedan	6,810
.....	7-p	Spec. Sedan	6,810
.....	7-p	Enc. Sedan	7,110
.....	7-p	Sub. Sedan	7,110
5200	7-p	Town Car	9,000

MARMON "74"

3695	2-p	Roadster	\$3,165
3604	5-p	Phaeton	3,165
3704	7-p	Touring	3,165
3604	5-p	Club Phaeton	3,465
3704	7-p	Club Touring	3,465
3799	5-p	Brougham Coupe	3,295
3729	3-p	Coupe De Luxe	3,465
3869	5-p	Sedan	3,295
3859	5-p	Sedan De Luxe	3,775
3999	7-p	Sedan	3,370
3974	7-p	Sedan De Luxe	3,850
3969	5-p	Sedan Limousine	3,900
3999	7-p	Sedan Limousine	3,975

MERCER "6"

3860	3-p	Runabout	\$4,500
3950	6-p	Touring	4,500
3900	4-p	Sporting	4,500
4070	4-p	Coupe	6,250
4240	5-p	Sport Sedan	6,250
4350	4-p	Tour. Limousine	6,500
4300	4-p	Brougham	6,500

MOON Series "A"

2440	5-p	Roadster	\$1,395
2625	3-p	Cab. Roadster	1,695
2460	5-p	Touring	1,295
2710	5-p	DeL. Sedan 2d.	1,695
2850	5-p	Sedan 4 d.	1,595
3850	5-p	DeLuxe Sedan 4d.	1,785

Newport

2760	5-p	Touring	1,495
2920	5-p	Sedan	1,815
8090	5-p	Petite Sedan	1,915

Metropolitan

2860	5-p	Touring	1,515
3020	5-p	Sedan	1,995
3190	5-p	Sp. Sedan	2,095

London

3270	5-p	Sp. Touring	1,985
3590	5-p	Petite Sedan	2,540

NASH "Special"

2870	2-p	Roadster	\$1,095
2960	5-p	Touring	1,095
3120	5-p	Sedan	1,225
3270	5-p	Sedan 4 d	1,545

"Advanced"

3320	3-p	Roadster	1,375
3400	5-p	Touring	1,275
3550	5-p	Touring 2 d	1,485

"Advanced"

3480	7-p	Touring	1,525
3640	4-p	Victoria	2,090
3750	5-p	Coupe 4 d.	2,190
4830	7-p	Sedan	2,290

SHIP. WT. PASS. BODY STYLE. PRICE

OAKLAND "6-54"

2420	3-p	Roadster	\$1,095
2510	3-p	Sp. Roadster	1,195
2485	5-p	Touring	1,095
2550	5-p	Sp. Touring	1,195
2620	5-p	Coach	1,215
2620	3-p	Landau Coupe	1,295
2720	4-p	Coupe	1,495
2700	5-p	Sp. Sedan	1,375
2860	5-p	Sedan	1,545
2885	5-p	Landau Sedan	1,645

OLDSMOBILE "30"

2145	2-p	Roadster	\$ 890
2270	2-p	Sp. Roadster	985
2200	5-p	Touring	890
2360	5-p	Sp. Touring	1,015
2330	2-p	Bus. Coupe	1,045
2460	4-p	Coupe	1,175
2410	5-p	Coach	1,075
.....	5-p	De Luxe Coach	1,150
2570	5-p	Sedan	1,285
2740	5-p	De Luxe Sedan	1,375

OVERLAND "91" 4

(100 in. W. B.)

1919	5-p	Touring	\$495
.....	2-p	Coupe	635
2205	5-p	Sedan De Luxe	715
2202	5-p	Std. Sedan 2 d.	655

"93" 6

(112 3/4 in. W. B.)

2443	5-p	Sta. Sedan	895
2584	5-p	Sedan De Luxe	1,150

PACKARD "6"

(126 in. W. B.)

3643	4-p	Roadster	\$2,785
3653	5-p	Touring	2,585
3595	4-p	Sp. Touring	2,750
3753	4-p	Coupe	2,585
3876	5-p	Coupe	2,685
3937	5-p	Sedan	2,585
3974	5-p	Sedan Limousine	2,885

(133 in. W. B.)

3793	7-p	Touring	2,785
4043	7-p	Sedan	2,785
4143	7-p	Sedan Limousine	2,885

"8"

(136 in. W. B.)

4060	4-p	Runabout	3,950
4090	5-p	Touring	3,759
4023	4-p	Sp. Touring	3,900
4242	4-p	Coupe	4,650
4337	5-p	Coupe	4,825
4528	5-p	Sedan	4,750
4535	5-p	Sedan Limousine	4,850

(143 in. W. B.)

4199	7-p	Touring	3,950
4655	7-p	Sedan	5,000
4710	7-p	Sedan Limousine	5,100

PAIGE "21-24"

3875	4-p	Phaeton	\$2,165
3935	7-p	Phaeton	2,165
3975	5-p	Brougham	2,195
4050	5-p	Broug. De Luxe	2,395
4325	7-p	Sedan De Luxe	2,840

PEERLESS "6-72"

(126 in. W. B.)

3175	5-p	Touring	\$1,895
3425	5-p	Coupe	2,495
3500	5-p	Sedan	2,565

(133 in. W. B.)

3275	7-p	Touring	1,995
3300	2-p	Roadster	2,285
3700	7-p	Sedan	2,765
3825	7-p	Limousine	2,925

"8-67"

3950	4-p	Phaeton	2,945
3995	7-p	Phaeton	2,990
4300	5-p	Town Brougham	3,895
4310	5-p	Town Sedan	3,895
4400	7-p	Sub. Sedan	3,995
4525	7-p	Berline Lim.	4,195
4100	4-p	Victoria Coupe	3,545
4150	5-p	Sub. Coupe	3,595

PIERCE-ARROW "33"

4350	2-p	Runabout	\$5,250
4500	4-p	Touring	5,250
4590	7-p	Touring	5,250
4730	3-p	Coupe	6,800
4800	4-p	Sedan	6,900
4960	7-p	Sedan	7,000
4750	4-p	Coupe Sedan	6,900
4730	6-p	Brougham	6,800
4850	7-p	Limousine	7,000
5060	7-p	Enclosed Lim.	7,000
4780	7-p	French Lim.	7,000
4730	6-p	Landaulet	7,000

"80"

3205	2-p	Roadster	2,895
3260	4-p	Phaeton	3,095
3385	7-p	Phaeton	2,895
.....	5-p	Coach	3,150
3265	4-p	Coupe Landau	3,820
3335	4-p	Coupe	3,695
3440	5-p	Sedan	3,895
3560	7-p	Sedan	3,995
3615	7-p	Enc. Drive Lim.	4,045

"80"

3205	2-p	Roadster	2,895
3260	4-p	Phaeton	3,095
3385	7-p	Phaeton	2,895
.....	5-p	Coach	3,150
3265	4-p	Coupe Landau	3,820
3335	4-p	Coupe	3,695
3440	5-p	Sedan	3,895
3560	7-p	Sedan	3,995
3615	7-p	Enc. Drive Lim.	4,045

"80"

3205	2-p	Roadster	2,895
3260	4-p	Phaeton	3,095
3385	7-p	Phaeton	2,895
.....	5-p	Coach	3,150
3265	4-p	Coupe Landau	3,820
3335	4-p	Coupe	3,695
3440	5-p	Sedan	3,895
3560	7-p	Sedan	3,995
3615	7-p	Enc. Drive Lim.	4,045

"80"

3205	2-p	Roadster	2,895
3260	4-p	Phaeton	3,095
3385	7-p	Phaeton	2,895
.....	5-p	Coach	3,150
3265	4-p	Coupe Landau	3,820
3335	4-p	Coupe	3,695
3440	5-p	Sedan	3,895
3560	7-p	Sedan	3,995
3615	7-p	Enc. Drive Lim.	4,045

SHIP. WT. PASS. BODY STYLE. PRICE

REO "T-6"

3350	3-p	Sp. Roadster	\$1,765
3182	5-p	Sp. Touring	1,595
3350	2-p	Coupe	1,645
3450	4-p	Coupe	1,975
3400	5-p	Sedan 4 d.	1,645
3545	5-p	Sedan	2,085
3705	5-p	Brougham 4 d.	2,235

REVERE "25"

3900	2-p	Sp. Roadster	\$2,750
3975	4-p	Speedster	2,750
4050	5-p	Touring	2,750
4300	5-p	Sedan	3,800

"M"

3700	2-p	Roadster	3,200
3800	4-p	Sportster	3,200
3970	5-p	Touring	3,200
4400	5-p	Sedan	4,000

RICKENBACKER "Six" (117 in. W. B.)

.....	3-p	Roadster	\$1,595
.....	5-p	Phaeton	1,495
.....	3-p	Coupe Roadster	1,695
.....	3-p	De Luxe	1,820
.....	4-p	Coupe De Luxe	1,995
.....	5-p	Spec. Sedan	1,775
.....	5-p	De Luxe	1,920
.....	7-p	Sedan De Luxe	2,070
.....	5-p	Coach Brougham	1,595
.....	5-p	De Luxe	1,720

"Eight" (121 1/2 in. W. B.)

.....	3-p	Roadster	1,995
.....	5-p	Phaeton	1,995
.....	3-p	Coupe Roadster	2,095
.....	3-p	De Luxe	2,220
.....	5-p	Spec. Sedan	2,195
.....	5-p	De Luxe	2,320
.....	7-p	Sedan De Luxe	2,470
.....	5-p	Coach Brougham	1,995
.....	5-p	De Luxe	2,120

ROAMER "6-54-E"

(118 in. W. B.)

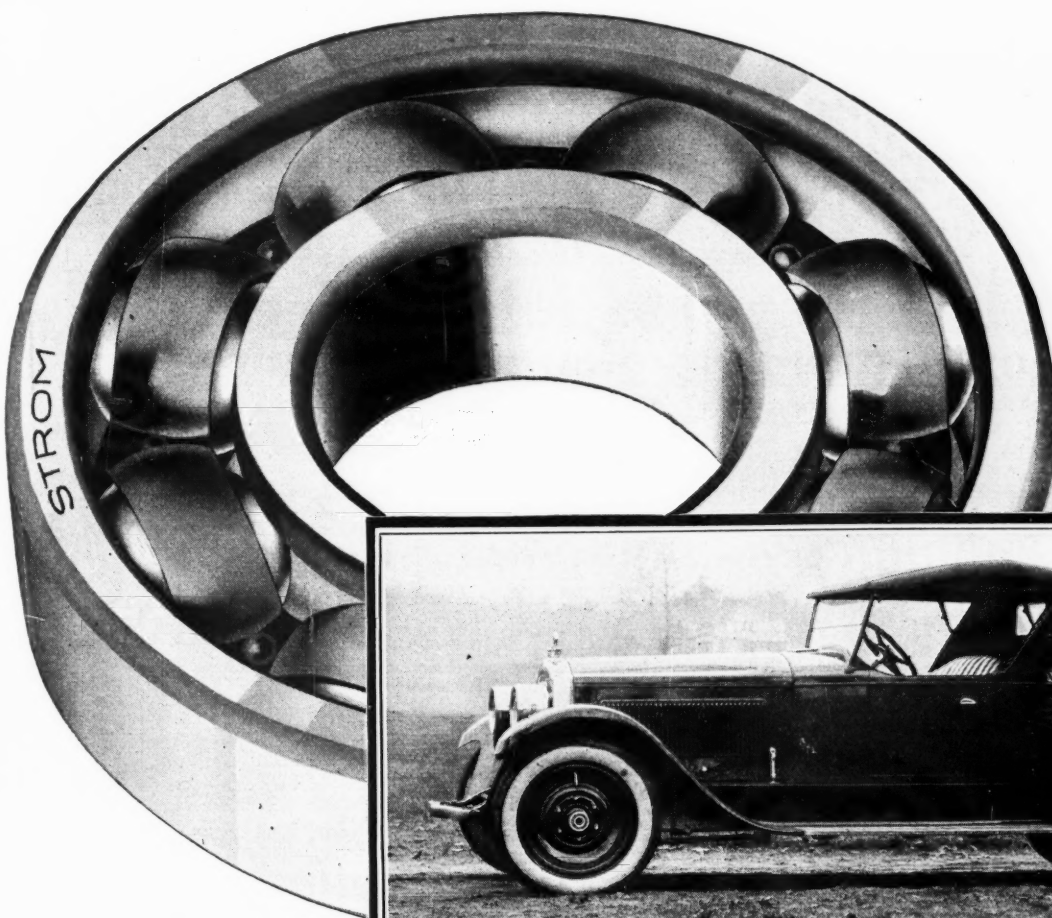
3100	2-p	Roadster	\$2,685
3100	4-p	Tourer	2,485
3300	4-p	Sp. Touring	2,750
.....	7-p	Touring	2,685
.....	3-p	Cab	



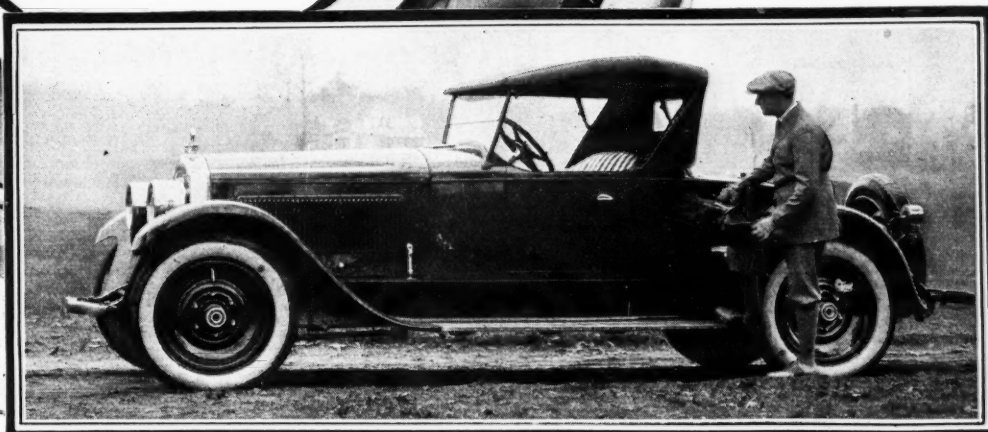
# Mechanical Specifications of Current Passenger Car Models

This list comprises cars distributed on a national basis

MAKE AND MODEL										ENGINE										ELECTRICAL SYSTEM										REAR AXLE		BRAKES		Rear Springs—Type and Length		Chassis and Lubrication—Type and Make		ABBREVIATIONS—NAMES OF MFRS. OF STOCK PARTS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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"Ask the man  
who owns one"—  
and learn how Strom  
Ball Bearings add to  
the reliability and  
smooth running of  
this great automobile



## Super-Strom Ball Bearings

—for smoother operation, brilliant  
performance and much longer life

**E**NGINEERS of America's leading automobiles are specifying Strom Ball Bearings for use in all vital parts, particularly in transmissions, differentials and rear axles.

For Strom Ball Bearings have made good in service—proved their superiority in their much greater resistance to wear and the greater dependability they insure.

In transmissions, for instance, the new Super-Strom Ball Bearing gives positively continued smoothness of operation. It holds the shaft in permanently rigid alignment. Its accuracy and long-wearing qualities make for much longer life of the gears with much lower maintenance costs.

The new Super-Strom is a stock bearing—of the deep-grooved type, without filling slots. It offers increased load-carrying capacity by the use of larger balls. It is accurate to microscopic thousandths of an inch. Retainers are unusually sturdy. Balls are of chrome alloy steel and are held to limits of size and sphericity one-half that required. Rings are of special analysis steel, hardened throughout, not merely case-hardened, thus giving exceptional durability.

Now available in quantity production—and in a wide variety of types and sizes. Write for catalog, price list and technical data. Our engineers welcome inquiries. Get the facts.

# Strom

## BALL BEARINGS

STROM BALL BEARING MFG. CO.  
4551 Palmer Street, Chicago, Ill.



Single-acting thrust  
bearing, flat seats  
(grooved races)  
1100-F Series



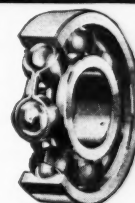
Double-acting thrust  
bearing, flat seats  
(grooved races)  
2100-F Series



Single-acting, self-  
aligning thrust  
bearing, leveling  
washer, 1100-U Series



Double-acting, self-  
aligning thrust  
bearing, leveling  
washers  
2100-U Series



Super-Strom  
deep groove,  
radial bearing



Double-row, deep-  
groove, radial bearing,  
bronze retainer



Angular contact  
bearing, combination  
radial and thrust



Adapter type  
bearing, with sleeve



# Mechanical Specifications of Current Passenger Car Models—Continued

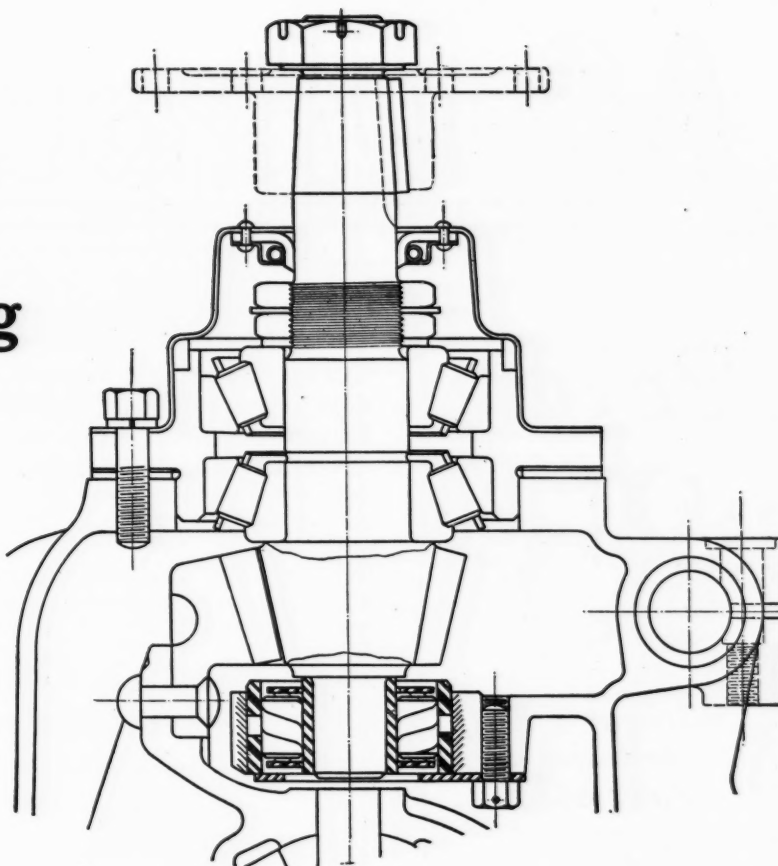
(This list comprises cars distributed on a national basis)

MAKE AND MODEL										ENGINE										ELECTRICAL SYSTEM										REAR AXLE										BRAKES										Chassis Lubrication—Type and Make										ABBREVIATIONS—NAMES OF MFRS. OF STOCK PARTS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
Wheel Base (Inches)										Tire Size										Decimals-Balloons										Make and Model										Number of Cyls										Rated H.P.										Piston Displacement										Valve Arrangement										Camshaft Drive										Crankcase Inlet or Sep.										Piston Material										No. Main Bear.										Oiling System										Oil Cleaner?										Cooling System										Thermostat?										Carburetor										Air Cleaner?										Ignition System										Generator and Starter Make										Clutch—Type and Make										Gear Set—Make										Universal—Type and Make										Type and Make										Rear Springs—Type and Length										Steering Gear—Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type and Make										Type 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# A Pinion Mounting of Proven Merit

This sturdy pinion shaft mounting is rapidly winning favor among builders of quality cars as one of unusual strength and inherent ruggedness.

**The features of this roller bearing construction are:**



**First**—the rigid bearing housing resists deflection.

**Second**—gear centers are maintained with any bearing adjustment, which insures long life and quieter operation.

**Third**—the Hyatt bearing greatly simplifies production and service assembly, as the pinion can be withdrawn without disturbing the ring gear adjustment—and a slip fit of one race is eliminated.

**This construction represents a distinct advance in pinion shaft mounting.**

## HYATT ROLLER BEARING COMPANY

NEW YORK   DETROIT   CHICAGO   SAN FRANCISCO

WORCESTER      PHILADELPHIA      CHARLOTTE  
PITTSBURGH      CLEVELAND      MILWAUKEE

# HYATT

## *Quiet Roller Bearings*





# Neutrowound

REG. U.S. PAT. OFF.

Patented and Manufactured under Reciprocal License from Navy Dept. U. S. Government.

**Price**  
**\$85<sup>00</sup>**

*Without Tubes,  
Batteries or  
Accessories*

*In Canada  
Price \$115*

**A Year  
In Advance**

## Has Revolutionized Radio!

The discovery—at our laboratory in Chicago—of the entirely new Neutrowound principle, created a sensation among Radio Engineers throughout the world.

This new principle—incorporated in the Neutrowound Radio Receiving Set provides maximum selectivity with no sacrifice of volume—enabling the operator to "tune in" distant stations as easily as those nearby—with the same volume, richness of tone—and with entire freedom from the usual howls and squeals, thus assuring consistent reception of distant stations the year 'round. The accomplishment of this result has been the goal of all radio engineers, ever since the inception of tuned radio frequency amplification.

## All Metal Case Shields Against Outside Interference

The Neutrowound is the first receiving set ever made with an all-metal case. Radio engineers have endeavored to apply the shielding principle without obtaining satisfactory results. Our engineers have developed and perfected this principle, so that the all-metal case not only serves as a sturdy protection for the vital parts of the receiving set, but also acts as an electro-magnetic shielding against outside interference.

## Concert Volume on Distant Stations

Comparative tests in New York and Chicago demonstrated that the Neutrowound brought in distant stations—with concert volume and perfect reproduction—that could not be reached by other receiving sets which cost several times as much. Similar tests have been made in other sections of the country and in every case the Neutrowound has demonstrated its superiority in every test.

**"All the Radio That You  
Can Buy  
at Any  
Price"**



# -1926 Model-

**A Precision Instrument of the Highest Quality  
With Exclusive Improvements—Unequaled for Efficiency**

## The Neutrostat

The Neutrostat—recently perfected in our laboratory—and used exclusively in the Neutrowound Radio Receiving Set—actually makes it possible to “build up” the strength of any signal, having sufficient intensity to be detected, to such proportions as to equal that of local reception.

The Neutrostat marks one of the greatest advances that has ever been made in radio engineering. This unit—varies the effective plate potential which governs the output energy, and makes it possible to obtain the ultimate radio amplification—consistent distant reception—unusual selectivity—clarity and volume—all far beyond anything that has ever been obtained heretofore, by any receiving instrument.

## Three Stages of Audio Amplification

Three stages of audio-amplification are successfully employed in the Neutrowound Receiving Set to give absolutely perfect, solid, audio volume—a volume that makes the very air vibrate in a full toned, resonant manner. There is volume to spare on most all reception—yet it can be modulated to a whisper.



**Mail  
This  
Now**

## Straight Line Frequency Variable Condensers

Three Variable Condensers are employed in the Neutrowound Receiver, for the purpose of tuning the receiving circuit, to any desired wave length or station—or from one station to another. These condensers are of the low-loss type, which insures sharper tuning and greater receiving efficiency. But the big and important feature of the Neutrowound Straight Line Frequency Variable Condenser is that it is a new idea in variable condenser construction. It is designed especially to give a similar change in frequency, in relation to the dial movement, throughout its entire scale. Therefore, with the new Neutrowound Straight Line Frequency Variable Condenser, all stations as tuned on the dials, are an equal distance apart, throughout the entire scale.

There is no crowding of stations on the lower range with this method, and it is possible to tune right on down to 200 meters with ideal tuning conditions.

There is at least one station to be found, every one and one-quarter degrees on the dials. The separation is the same throughout—and there are no stations in between. *Therefore, you hear them all—but just one at a time.*

In the Neutrowound you will find that perfect balance between selectivity and volume, which is necessary to meet the various radio conditions—extreme selectivity, to enable you to “cut through” powerful local stations, for the distant ones, or to separate two distant stations using nearly the same wave-length—and volume, from distant stations—perfect audition, under absolute control—the subdued, sweet music of an orchestra far away—or concert volume, loud enough so that your family and friends can all enjoy the programs broadcast from distant stations.

## It's a Money Maker For “Live” Dealers

Mail coupon for complete information.

### NEUTROWOUND RADIO MFG. CO.

Radio Division:

ADVANCE AUTOMOBILE ACCESSORIES CORP.  
1721 Prairie Ave. Dept. 726 Chicago, Illinois

## Dealers' Coupon

NEUTROWOUND RADIO MFG. CO.  
1721 Prairie Ave., Dept. 726, Chicago, Ill.

Send complete information, Dealers'  
Discounts and Neutrowound Sales Plan.

Name .....

Street .....

City .....

State .....



# Believes it will be great carriage for well-to-do class

T. D. Wilkin is enthusiastic over the automobile and believes that it will be the great carriage for the well-to-do class. However, he says that his experience has shown him that the machines are by no means perfect yet, but he thinks they will be soon. His carriage is propelled by a gasoline engine. The speed is regulated by gearing, and not belts.

Louis Will's carriage is also fitted with a gasoline engine. He has taken a number of long rides and finds much pleasure in spite of the little inconveniences.

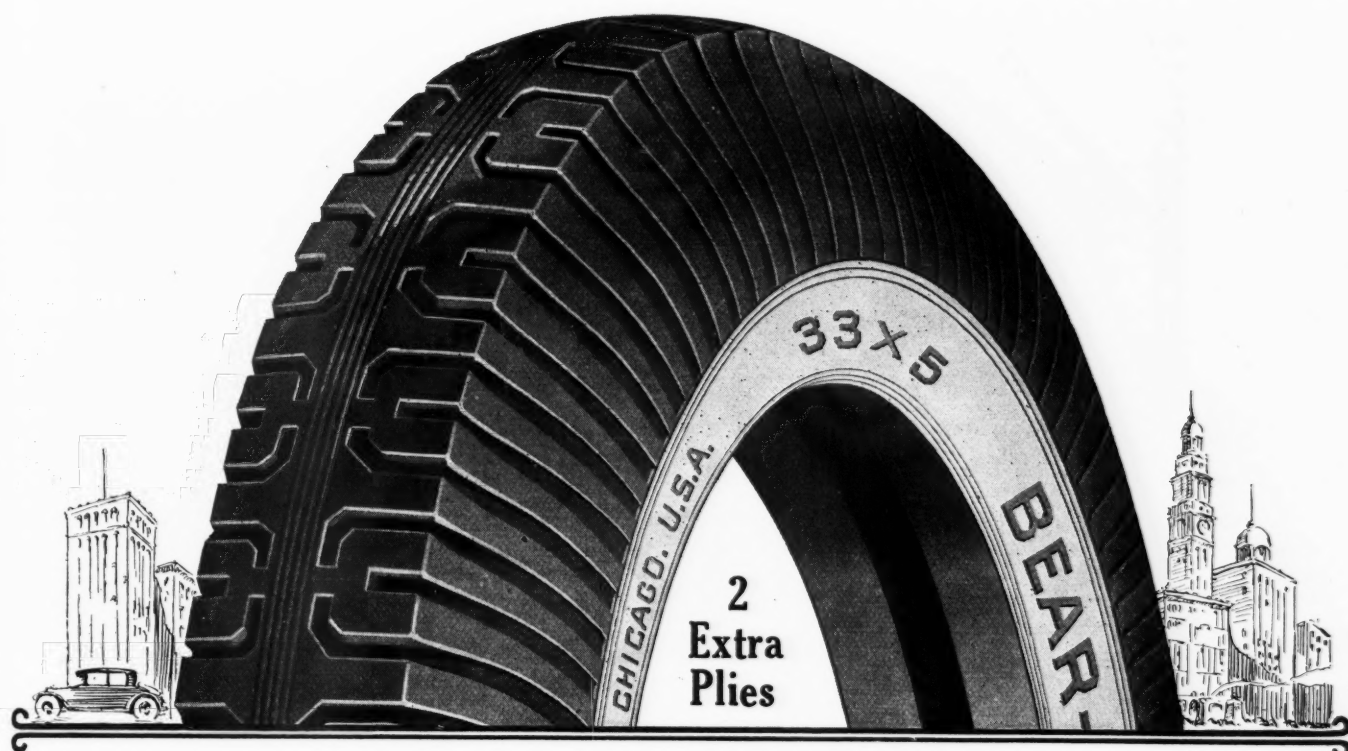
*A News Item—  
October 17, 1899*

But since then the automobile has become taken for granted—largely because 14 million cars out of 18 million so far built have contained Timken Bearings.

For all those years there has been Timken advertising to the public. That is why you ward off those technical discussions when you say "Timken-equipped."

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO

**TIMKEN**  
*Tapered*  
**ROLLER BEARINGS**



## Two Kinds of Men Want to Read the First Advertisement of This Established Progressive Company

### *The Dealer Who Wants a Bigger Selling, Better Tire*

5,000 dealers have, heretofore, taken our complete output. These dealers are those close to us who, at the beginning, sensed the sales and profit advantages of selling a sensation-ally-attractive-looking, and an **obviously-better** tire. They are dealers who cater to a **select class** of trade: i. e., such car owners who want something better than the regular commercial standard and who want **distinction** in tires as well as in body design, shape, finish, and accessory equipment.

NOW—that Simplex-made BEAR-CAT Cords are down to the price level of the other good tires, there will be hundreds of thousands more motorists who will want the appearance and mileage advantages that Bear-Cat Cords alone can give.

The purpose of this advertisement is, therefore, to extend to **one** dealer in each community an invitation to cash in on the popularity which Bear-Cat Cords induce for themselves wherever shown. Write for our **Exclusive Dealership Proposition**.

**Simplex Tire & Rubber Company**  
2035 South Michigan Avenue, Dept. 17, Chicago, Illinois

### And the SALESMAN Who Wants to Become FINANCIALLY Independent

To the salesman who has served his customers in a manner which has always bespoken his sincerity of purpose, we stand ready to make a mighty interesting proposition; a proposition which will further strengthen his standing with his clientele, and which will absolutely make him financially independent. It is as good as Bear-Cat Cords. Write for it if you are ready to make your final permanent connection.

# Bear-Cat Cord



# KISS

## Reduces

*The  
Six  
2-Door  
Now*

*\$1795*

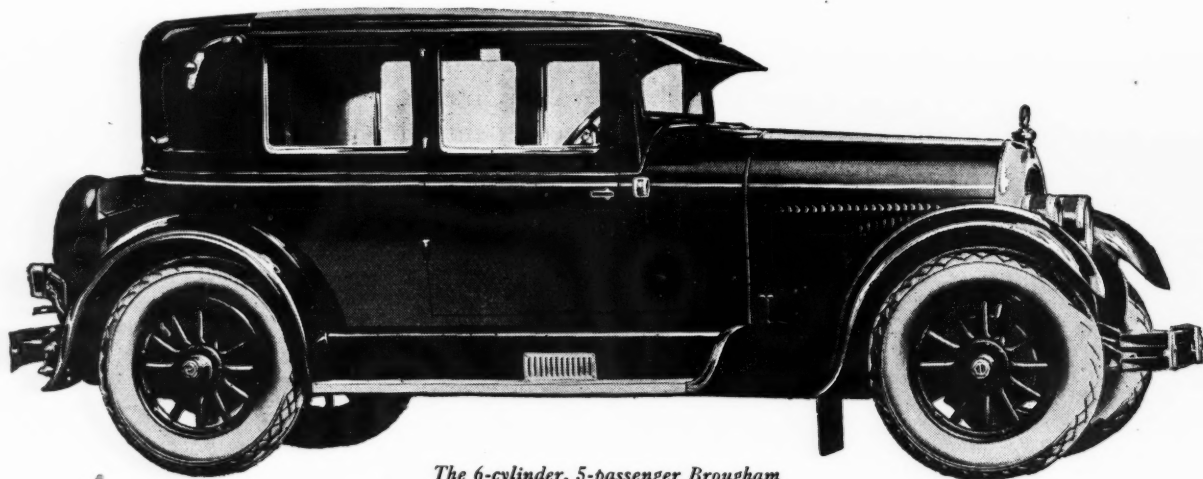
*Formerly \$1895*

**E**FFECTIVE immediately, new low prices are in force on all popular models in the Kissel line.

Concurrent with this announcement Kissel introduces two important improvements in automobile construction—the new Kissel stabilized chassis, and closed models with wider doors.

This news is in accord with the Kissel policy to give the public the greatest dollar-for-dollar value ever offered in custom-built motor cars.

No changes have been made in the mechanical excellence of the cars. No changes have been made in equipment or in the high quality of



*The 6-cylinder, 5-passenger Brougham Sedan. Hydraulic 4-wheel brakes and balloon tires standard equipment*

# SELL

CUSTOM  BUILT

# Prices!

appointments. These new prices were made possible because of certain manufacturing economies introduced in the Kissel plant and because of the record-breaking production for the first six months of 1925.

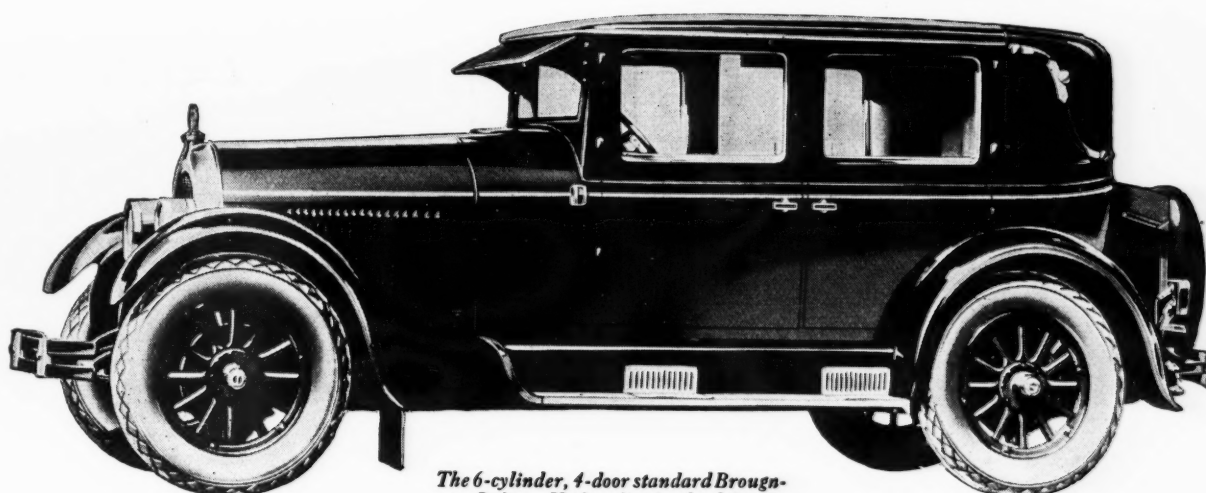
Here, indeed, is more good news for Kissel dealers! It means that the tremendous increase in Kissel sales made during the first half of the year will unquestionably be surpassed by the heavy demand for Kissels during the next six months. Write for information concerning unoccupied territory and revised list of prices.

KISSEL MOTOR CAR COMPANY, *Hartford, Wisconsin*

*The  
Six  
4-Door  
Now*

**\$1995**

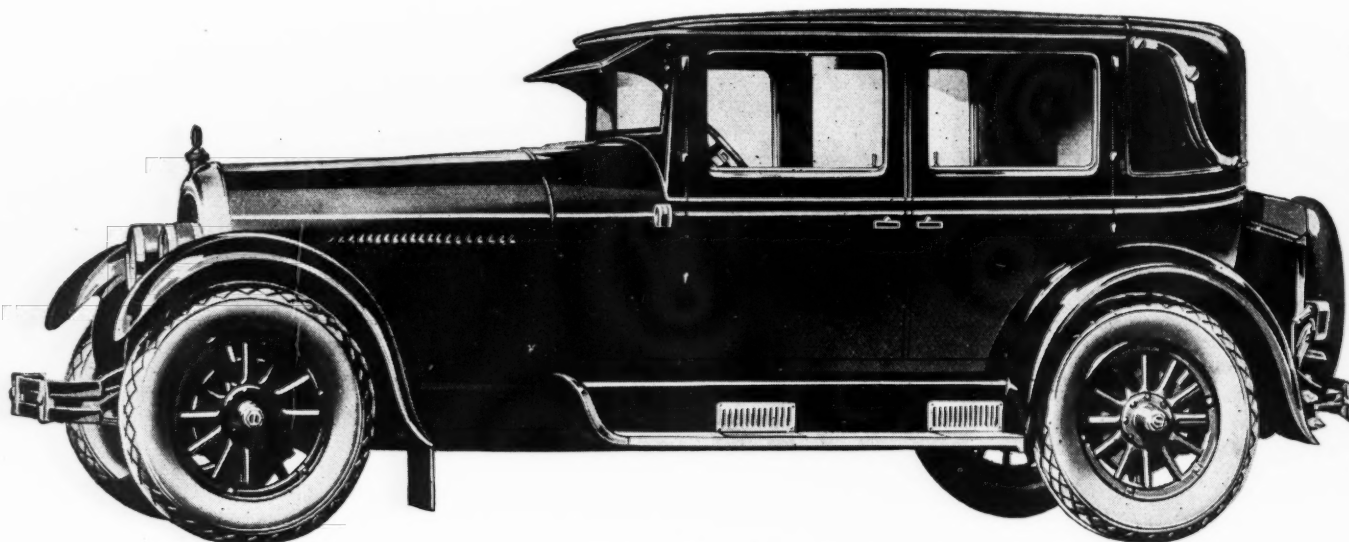
*Formerly \$2250*



*The 6-cylinder, 4-door standard Brougham Sedan. Hydraulic 4-wheel brakes and balloon tires standard equipment*



# KISSEL Eights



Now  
**\$2395**  
Formerly \$2550

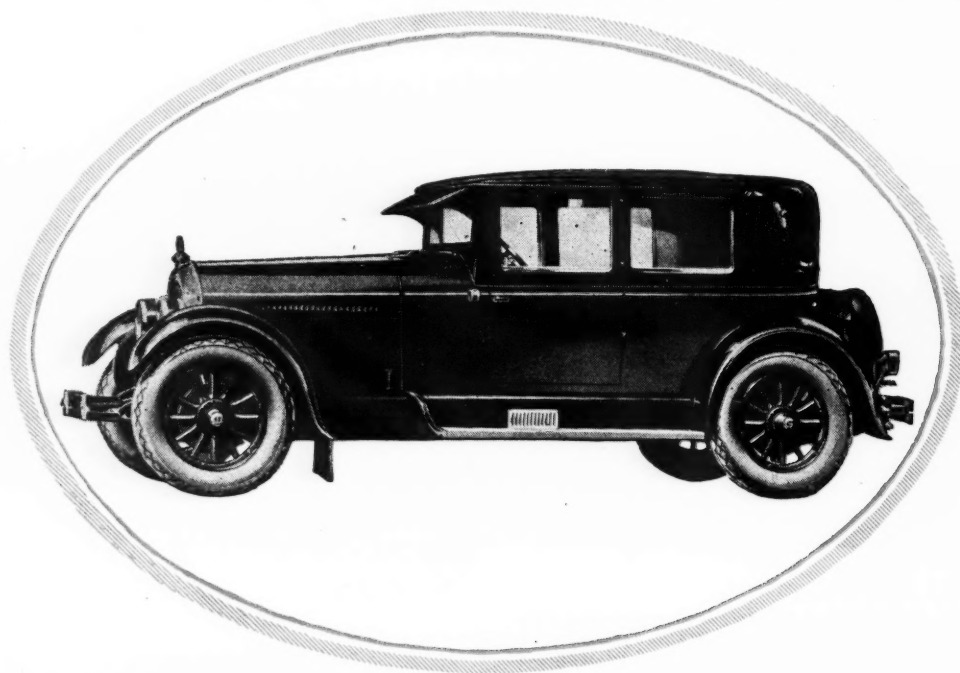
## *The Eight-Cylinder 4-door Standard Sedan*

You have watched Kissel sales mount month by month since January. Now keep your eye on Kissel for the next six months.

What is this price reduction going to mean? It will mean that thousands of people who have always desired a Kissel can now become Kissel owners. In a word, our market and the market of Kissel dealers will be broadened.

Kissel now has one of the best propositions ever offered to dealers. Write immediately for our new sales plan.

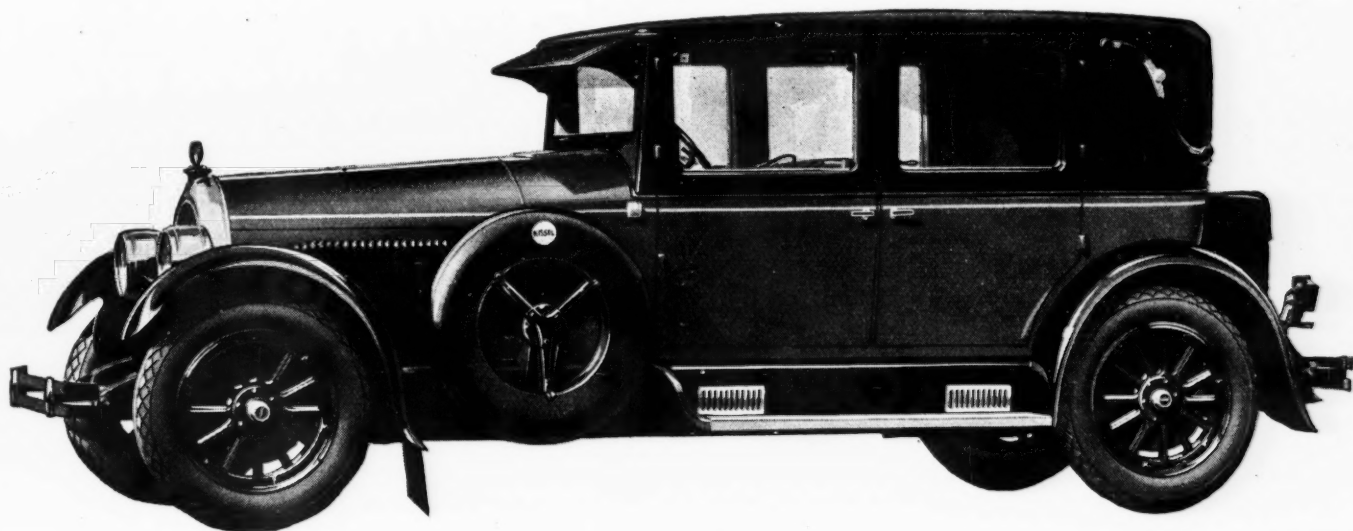
THE KISSEL MOTOR CAR COMPANY, HARTFORD, WISCONSIN



## *Eight-Cylinder 2-door Brougham Sedan*

**\$2195**

# at New Low Prices!

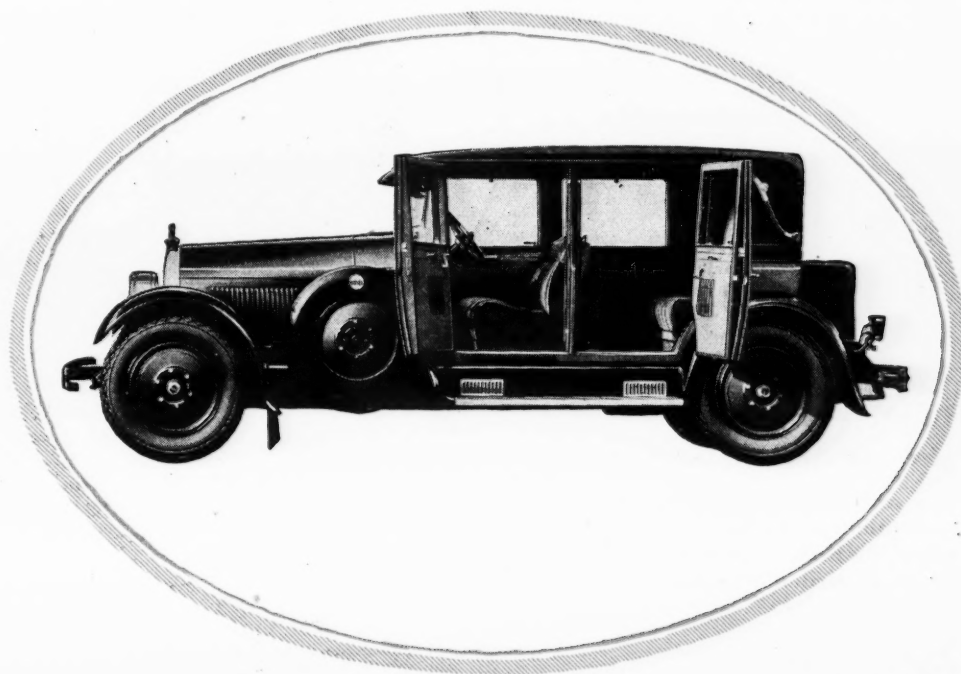


## *Eight-Cylinder De Luxe Brougham Sedan (137-inch Wheelbase)*

An Eight-Cylinder 4-door Sedan mounted on a 137-inch wheelbase at \$2985. Here is the Eight of all Eights and the value of all values. This great car, with its wide 32-inch doors (illustrated below) and its long, low body of exquisite beauty, covers any road with an ease and comfort that is almost unbelievable. Like all Kissels it is built on the new stabilized chassis—the strongest, most rigid ever constructed. All bodies built by Kissel.

Now  
**\$2985**  
Formerly \$3250

*Eight-Cylinder  
De Luxe  
Brougham  
Sedan  
showing the  
new body—  
(32-inch doors)*





## Good bye, buggy wheels

# Motor cars have outgrown the wheels designed for the "horseless carriage"

*IT'S* been a long time since the automobile was called a horseless carriage . . .

Since a trip without a breakdown afforded more conversation than "getting London" or a "hole-in-one" does now!

The sleek, swift, sophisticated automobile of today prefers to forget its clumsy "put-put" relative of twenty years ago . . .

Yet there has been one insistent reminder which carried back to their common ancestor, the buggy . . .

For all their difference in speed, weight, power, and luxury, the modern automobile and the horseless carriage rode on wheels which were practically identical!

A great engineer realized that for twenty years, while every other part of the car moved forward, the wheels stood still . . .

He decided to make a wheel in keeping with the speed, weight, and luxurious lines of the modern automobile.

Naturally, he chose the material which made possible the other parts of the car—steel.

But he saw that a new design—a new engineering principle—was as necessary as a new material.

He created the only *convex* wheel, using the natural resilience of steel to the utmost to save the car from road shocks . . .

Permitting the placing of brakes and king pins within the wheel, for more positive braking and easier steering . . . giving the brakes greater protection from mud and water.

A *demountable* wheel, hiding the brakes but making them immediately accessible when adjustments are needed.

This wheel went through the most exacting tests conceivable, as equipment on official cars during the War. It emerged triumphant . . .

More than 50 per cent. of European cars now use it! America is turning to it . . .

The Budd-Michelin Wheel!

# B U D D

## WHEEL COMPANY

Detroit

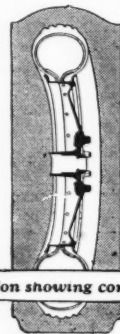
Philadelphia

Remember, every steel wheel is not Budd-Michelin. No other can have its exclusive design, its exclusive features.

Read below the list of Budd-Michelin advantages. Appraise the beauty of its stream-lined form. Realize that here, at last, is a wheel worthy of the *automobile*!

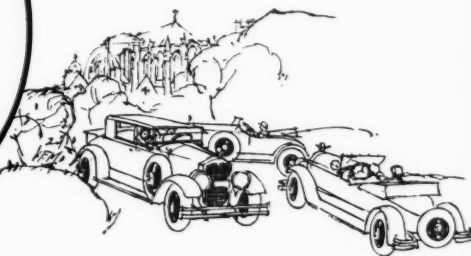
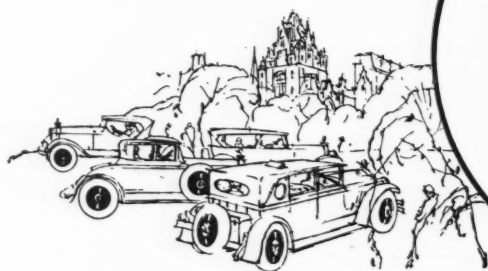
### BUDD-MICHELIN—the All-Steel Wheel gives you these advantages:

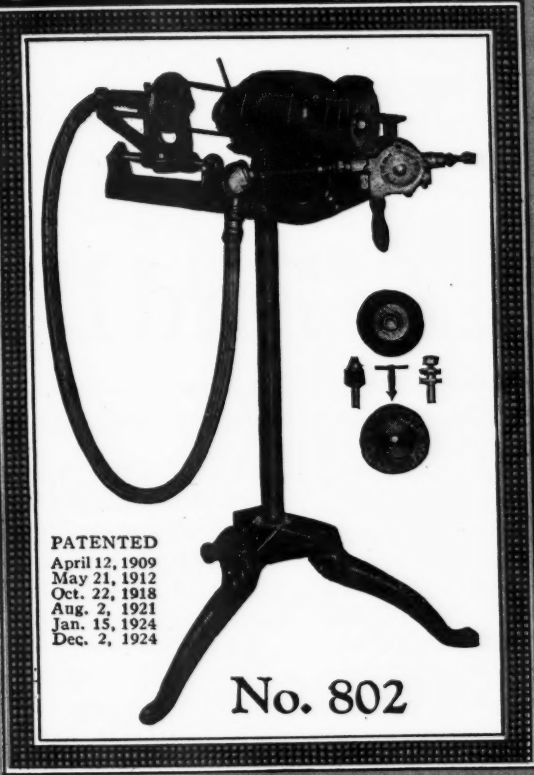
—a scientific convex form, increasing resilience, and permitting the placing of brakes and king pins *within* the wheel, for better braking and easier steering—for greater protection of brakes from mud and water



Cross-section showing convex design

—a demountable wheel which hides the brakes but gives immediate access to them when adjustments are needed.  
—a light wheel (lighter than wood) tapering toward the rim, making starting and stopping easier  
—five wheels to a set. An extra wheel to dress up the rear of the car, easy to substitute in case of tire trouble. No rims to remove  
—everlasting strength, promoting safety. Triumphant beauty!





PATENTED  
April 12, 1909  
May 21, 1912  
Oct. 22, 1918  
Aug. 2, 1921  
Jan. 15, 1924  
Dec. 2, 1924

No. 802

**SIoux**  
Trade Mark Reg. U.S. Patent Office

**Handy Power for Cramped Quarters!**

PLACES that are unusually hard to get at with ordinary power tools are easily and quickly accessible with this flexible shaft!

You can hold it up steadily without breaking your back!

## FLEXIBLE SHAFT AND ATTACHMENTS

You can use it in difficult places in which you couldn't get at the work with any other method. It often saves the trouble of detaching the motor from chassis.

*It pays for itself in valve-grinding, carbon cleaning, polishing, drilling, paint removing, tire-buffing, emery wheel grinding, etc.*

For valve-lapping, the Sioux Flexible Shaft has advantages not found in any other machine. *The three-speed pulley* makes it possible to adapt the correct speed to the size of the valve. Thus, for larger valves you can use the low speed in order to keep the grinding compound from caking and flying off. And you can use the higher speeds for smaller valves.

The clutch control makes it possible to stop the grinder instantly without shutting off the power.

The Sioux Flexible Shaft and Attachments are saving time and increasing profits in several thousand shops. Write for full information.

### Your Jobber Sells Them

ALBERTSON & CO., SIOUX CITY, IOWA



# Who's Making

## Opportunity No 1 for Ford Dealers



Ford dealers who sell the Stewart-Warner Speedometer are making the money. There is no need to limit yourself to the profit on the sale of the car. Get the other profits that are rightfully yours.

Ford's instructions to the new car buyer—the "Notice to User" placed on the windshield of every Ford car—creates the greatest opportunity to make money that dealers have.

In addition to instructions to keep the speed within 20 miles the first 500 miles—which alone makes a Speedometer necessary—the much more highly important instructions to change oil after the first 400 miles and every 750 miles

thereafter—makes the Stewart-Warner Speedometer necessary.

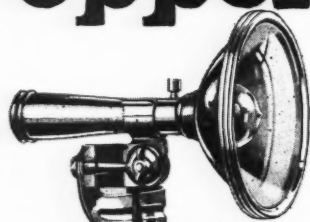
It is the only Speedometer with the colored dials that appear at the exact oiling and greasing periods. It also has an indestructible metal chart that tells WHERE to oil and grease when the colored dials appear.

Every time you let a Ford customer drive away without a Stewart-Warner Speedometer on his car, you are "passing up" a profit that could easily be yours. Multiplied by the number of cars you sell—a nice lump sum of good gold.

Begin today to add this profit to your income.

## Opportunities for All Dealers

### *The Stewart-Warner Family*



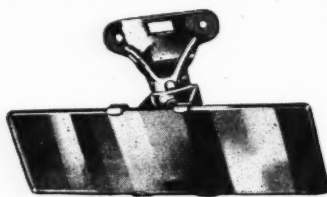
Stewart-Warner Spotlight  
For Open or Closed Cars  
\$4.25



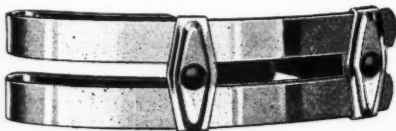
Stewart-Warner  
Miniature Spotlight  
Prices range from \$9.00  
to \$12.50

Stewart-  
Warner  
Electric  
Windshield  
Cleaner

Complete - \$8.50  
West of 100° Meridian  
\$8.75



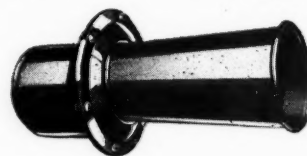
Stewart-Warner Rear  
Vision Mirror  
For Open or Closed Cars  
\$2.00



Stewart Fender Guards  
Black-enameled bars, per pair, \$23.00  
West of 100° Meridian, \$26.00  
Nickel-plated bars, per pair, \$25.00  
West of 100° Meridian, \$28.00



Stewart-Warner Single, Double and Triple Bar Bumpers  
Black Enameled or Nickel Plated Bars  
Prices range from \$12.50 to \$37.50  
Slight increase in Western Prices

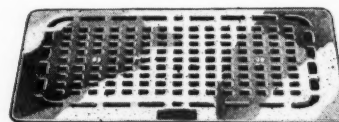


Stewart-Warner Electric Horn  
Complete, \$5.00  
West of 100° Meridian \$5.25



Stewart-  
Warner  
Shock  
Absorbers

Per Pair - \$15.00  
West of 100° Meridian \$15.50  
Special Model for Fords \$11.50  
West of 100° Meridian \$12.00



Stewart-Warner Car Heater  
Small Model \$18.00  
West of 100° Meridian, \$19.50  
Large Model \$22.00  
West of 100° Meridian, \$23.50



Stewart-Warner  
Vacuum Pump

# the Money?

## This is the Man -

We'll tell you "Who's Making the Money," and we are in an excellent position to know.

Several months ago, in co-operation with our 96 direct factory branches throughout the world, these branches traveling hundreds of men, we established a Dealer's Service Bureau at the plant in Chicago.

Observations by this great organization have brought to light some very interesting things regarding dealer conditions.

We cannot print the pitiable things we have found, but we can record the many bright spots, the brilliant successes of dealers who have done things that the others neglected to do. We found out—"Who's Making the Money."

It is the man who sells the car fully equipped—and who goes into the accessory business as though it were a business—not merely an incidental.

Today, a car is not ready for the road unless it has Bumpers, Shock Absorbers, Electric Windshield Cleaner, Speedometer, Spotlight and Rear Vision Mirror.

*Dealer's Service Bureau.*—You are invited to put your business problems up to our Dealer's Service Bureau. No matter where you are located, no matter what business problem is bothering you—turn-over, stock, display, buying, merchandising, advertising—write to the Stewart-Warner Dealer Information Bureau, 1826 Diversey Blvd., Chicago, Ill., or take it up with the Stewart-Warner man who calls on you.

STEWART-WARNER SPEEDOMETER CORPORATION  
CHICAGO - U. S. A.

The man who is selling these things is making the money.

If you are in the automobile business, for heaven's sake be in it for all it is worth—not for just a nibble, but for a bite that will land something worth while.

*Don't say "I haven't the capital with which to stock an accessory line."*

You don't need capital. You can start with one of each of the Stewart-Warner products—which gives you a complete line—then get your stock as you need it, from the Stewart-Warner Distributing Station. There's one within a few hours of every section of the country, and in large centers in all foreign lands.

You can figure it out for yourself just how much it will cost to start—and start right. There's the line and the list prices on the opposite page. Total them, deduct the discount—and you will see how easy it is to get into this profitable business.

It will turn over quickly—and before you know it you will be among those "who are making the money."

# Stewart-Warner

## Accessories

### THE DAILY PROFIT FOR DEALERS



features that sell  
the new Chevrolet

*for Economical Transportation*



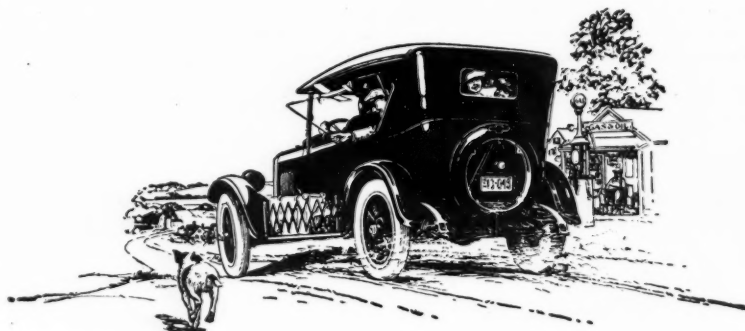
**E**CONOMY — low in price; low in cost of operation, with service available everywhere, Chevrolet is recognized as the foremost car "for Economical Transportation".

These features of outstanding economy appeal to the largest automobile market in the world. And because Chevrolet cars are easy to sell there is provided another kind of economy that lowers overhead, makes quick turnover of capital and brings Chevrolet dealers increased profits.

CHEVROLET MOTOR COMPANY

DETROIT, MICH.

DIVISION OF GENERAL MOTORS CORPORATION



QUALITY AT LOW COST



## A Standardized Unit That Offers Big Value

**T**HE Standard De Luxe is the biggest selling Air Compressor built in America!

So great is our production on this one standardized unit that it represents the biggest value for a low price ever offered in a 2-stage Compressor. The economies of big production go to you.

Before buying any Compressor write for catalog 26 explaining all about this unit which meets the needs of the average garage, tire shop and filling station.

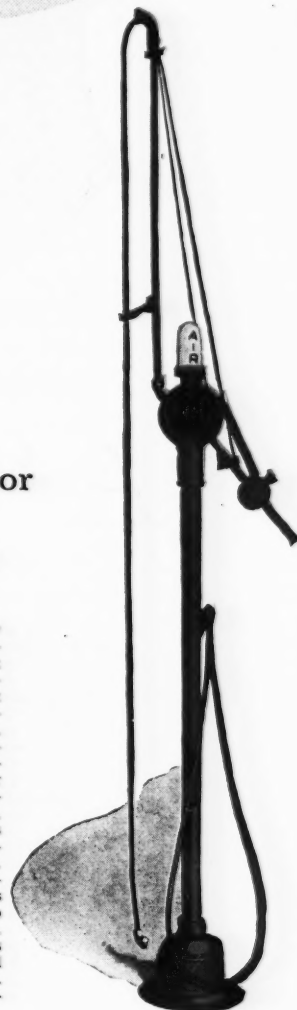
**THE UNITED STATES AIR COMPRESSOR  
COMPANY**

5304 Harvard Ave.

Cleveland, Ohio

### U. S. Air Towers

Simple, extremely so — no counter-acting oil check springs or anything to get out of order or require adjusting. The most practical and economical Tower built today. Balanced perfectly. Requires less hose, which is always clean. U. S. method of reinforcement makes it impossible to bend hose arm. Two oil cups make oiling and greasing easy. Send for full details.



# U.S. Air Compressors






## A "Surefooted" Car

**M**UD . . . . water . . . . ruts . . . . treacherous going! At times and places like this you appreciate the "surefootedness" that distinguishes the car equipped with the Ross Cam and Lever Steering Gear . . . . the stability, control and response that are always yours. Emergencies like this merely emphasize what Ross gives *all the time*.

ROSS GEAR AND TOOL COMPANY, 400 Heath Street, Lafayette, Indiana

**ROSS**  
**CAM and LEVER**  **STEERING GEARS**  
**EASIER STEERING** **LESS ROAD SHOCK**

# IMPORTANT ANNOUNCEMENT GREAT UPSET IN LOCKING REQUIREMENTS

UNDERWRITERS' DECISION  
MAKES MOST LOCKS OBSOLETE

*Business Safety Demands Your Complete Knowledge of Situation*

## ELECTROLOCK VINDICATED

Philadelphia, June 2nd, 1925. The Underwriters' Conference just announced that on June 2nd, 1926 a new theft insurance rating will be put into effect favoring locks of the "co-incidental" or ELECTROLOCK type.

### Reason for New Rating

The exceptional effectiveness of the coincidental type of lock which has been demonstrated by 10 months practical use of ELECTROLOCK without a *recorded theft* was a deciding factor in this revision of rates. The Underwriters believe that the coincidental form of protection has been so effective in reducing thefts that it deserves particularly favorable recognition.

### How the Co-Incidental Lock Operates

A lock of the ELECTROLOCK type is one which is built in such a manner that the driver cannot *forget* to lock it whenever he leaves the car, ELECTROLOCK replaces the ignition switch with a button which automatically locks the car when the engine is shut off. It cannot be unlocked without the proper ELECTROLOCK key while the coils and all other vital parts are so strongly protected by heavy armor that it is impossible for the thief to break through and steal without a tremendous amount of time absorbing work.

### Dealers Have Anticipated This Action

Many Ford and Chevrolet dealers have already so strongly appreciated the obvious superiority of ELECTROLOCK that they have won the good will of their customers by anticipating this rate-reducing action of the Underwriters' and have already made ELECTROLOCK standard equipment on all the cars they have sold. ELECTROLOCK is also available for other makes of cars.

### Action Makes All Other Locks Obsolete

This action by the Underwriters' has caused a tremendous upset in the locking business as it relegates all but co-

incidental locks to a second place in insurance ratings and virtually makes them so obsolete that no car owner will want or purchase any other lock but one of the ELECTROLOCK type.

### Dealers Can Win Good Will by Prompt Action

Mr. Dealer, NOW is the time when prompt action is absolutely essential for the protection of your business! No one likes to loose money, and yet that is just what will happen to your customers if you sell them any lock except one of the ELECTROLOCK type. You can be sure of one thing:—as soon as these customers find out from their insurance companies that your lack of foresight is going to make them pay more money for second rate insurance protection you will loose business. Don't you see how absolutely necessary it is for you to sell ELECTROLOCK?—and how you can win out ahead of your competitors by doing so? The Underwriters' decision and ELECTROLOCK are team-mates, working for better protection, better rates and satisfied motorists.

### How to Obtain Complete Information

Complete information regarding Ford and Chevrolet dealer franchises as well as details regarding the lock itself and its installation for these and other cars can be secured from the MITCHELL SPECIALTY COMPANY of PHILADELPHIA or the Electrolock Distributor in your territory. This firm is the manufacturer of ELECTROLOCK (the only accessory lock in Group one New Standard) and of automobile hardware since 1914. The Company is also willing to send its engineers to automotive plants throughout the country for conferences regarding the adoption of ELECTROLOCK as standard equipment on any make of car in strict accordance with the Underwriters' latest requirements. As previously stated, communications regarding ELECTROLOCK should be addressed to

**The Mitchell Specialty Company**  
Philadelphia, Pa.

**Electrolock**  
YOU CAN'T FORGET TO LOCK IT!

*Provides Theft Proof—Nationally Legal—Non-Forgettable—Insurance Lowered Protection.*

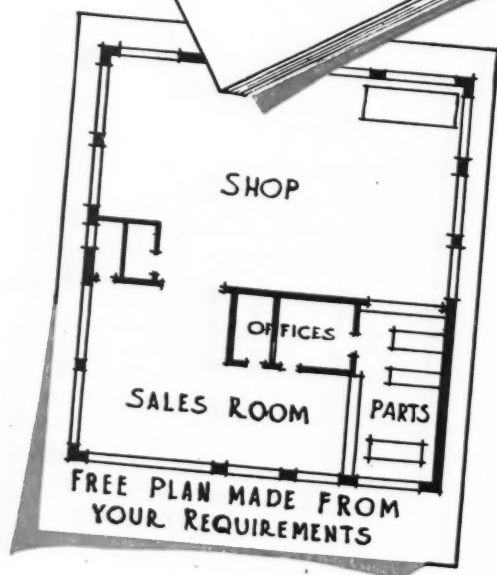


# FREE to YOU—Lupton's expert Parts Merchandising Service

*—a free Service for Dealers,  
Garages, and Accessory Stores*



← **Y**OU will get a world of practical information on parts and accessory merchandising from this new *free book* published by Lupton. It shows you how to make your parts and accessories earn you a better profit. Send for your copy today.



Take advantage of Lupton's *free Planning Service*, too. Plans are made from your measurements to suit your individual needs. Details of this remarkable free service will be sent promptly on request.

## Use the Coupon

DAVID  
LUPTON'S  
SONS CO.  
2631 Woodward  
Ave., Detroit, Mich.

Please furnish me free of charge, blue-printed drawing of my parts department as recommended by you. Attached is drawing of my floor plan or building, together with necessary measurements and recommendations I would like to have included. ☐ Please send your free booklet, "Better Parts Merchandising."

Name.....

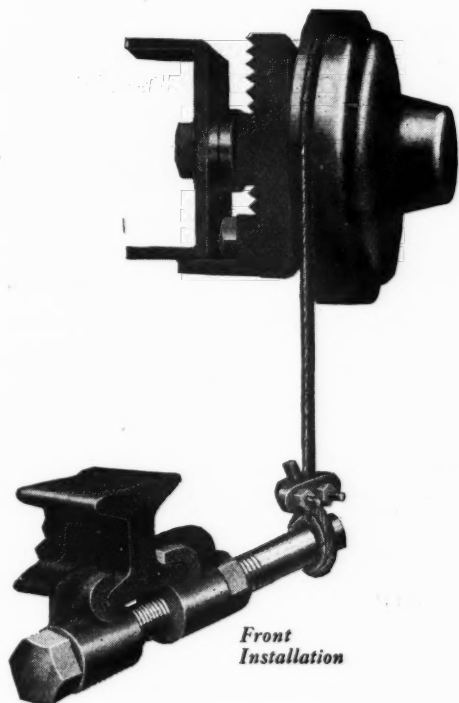
Street .....

City.....State.....

Dealer in.....cars

For dealers who are contemplating building we have an expert engineering and architectural service which will save you money and which we can offer at a very moderate fee. Let us explain this service.

# Greater *Gross*—Better *Net*



You'll like the *gross* profit on Cushers volume of sales.

But the *net* is even better. No big investment for stock eats in. No service overhead goes against Cushers.

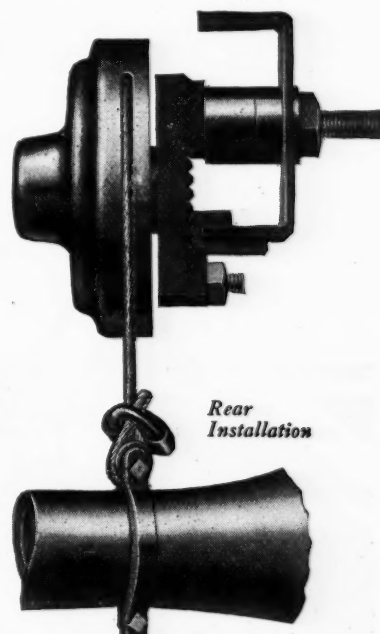
One size suits all cars perfectly. Cushers *Automatic Clutch Action* provides more scientific compensation than any number of added sizes could do.

One operation—the installation—is all there is. No take-up for stretch. No replacement for breakage. No lubrication.

Designed with "Flash Action," Cushers handle balloon tires and high pressure tires equally well, never stiffening normal spring action.

The whole market is yours with Cushers. The Cusher organization is as big as the market. Cushers are making the trade the big factor in rebound controls.

CHICAGO ROLLER SKATE CO.  
Manufacturers of Screw Machine and Automotive Products  
Cushers Sales Department, Fulton-Dean Co.  
332 South Michigan Avenue, Chicago, Illinois



# Cushers



# Who Made the Valves

—or, if you are a garage proprietor, the valves in the last car that came in for service.

It's no reflection on you if you don't know—for such lack of knowledge is quite general.

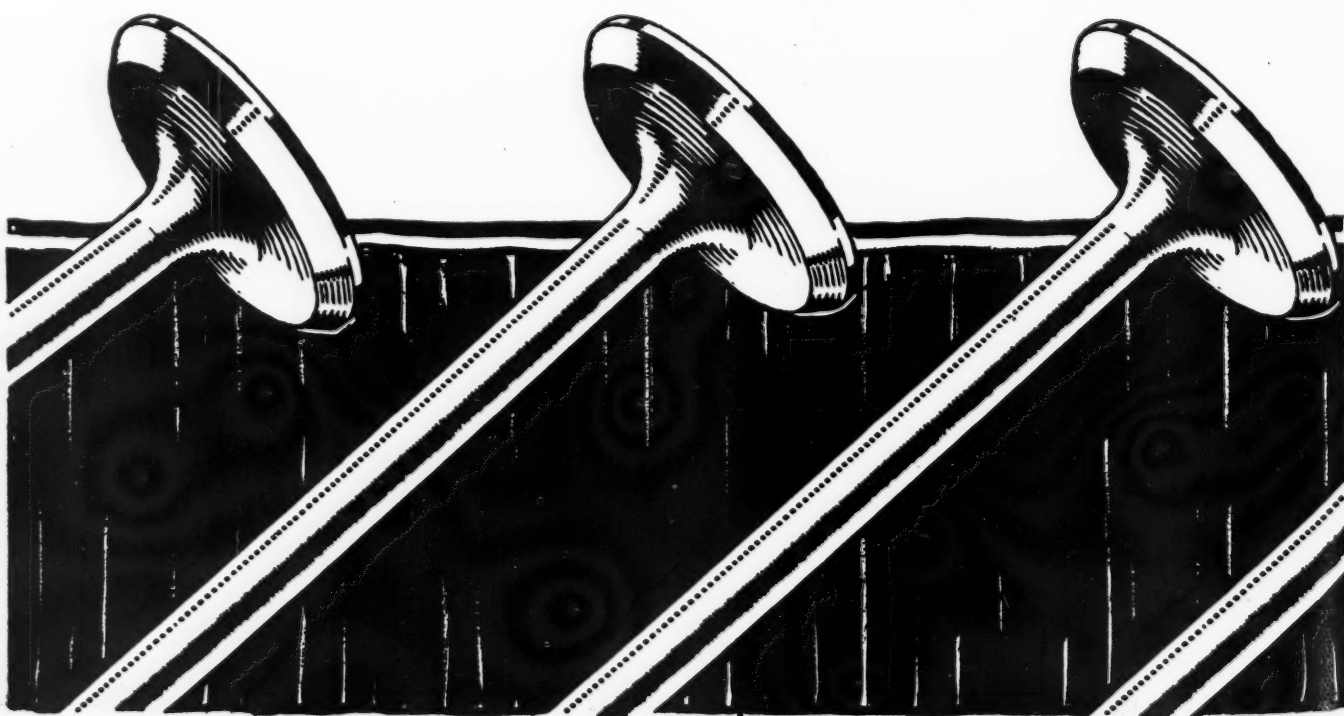
But you *do know how these valves look* when they come in—how often they are warped, pitted, crusted over with carbon, burned or broken.

Do you know that a great deal of this is unnecessary—that it wouldn't be so if the engine had begun life with Thompson Silcrome Valves?

And have you considered that it is both good service and good business *not to regrind* all these old worn-out valves, or to just replace one of them, but to sell the owner a new set of Thompson Silcrome Valves?

It gives you a better profit and makes friends, too

# Thompson



# in Your Car?

—because your customers will get *continuous, reliable, engine efficiency.*

Thompson Silcrome Valves are used as original equipment in sixty makes of airplanes, automobiles, trucks, tractors and motorcycles. They run red hot without warping, burning or breaking, they last four times as long as ordinary valves, they have passed successfully the most extraordinary tests valves ever had to meet.

These valves are distributed to the replacement trade by representative jobbers. In ordering, remember to order Thompson Silcrome Valves by name.

**THOMPSON PRODUCTS, INC., CLEVELAND**

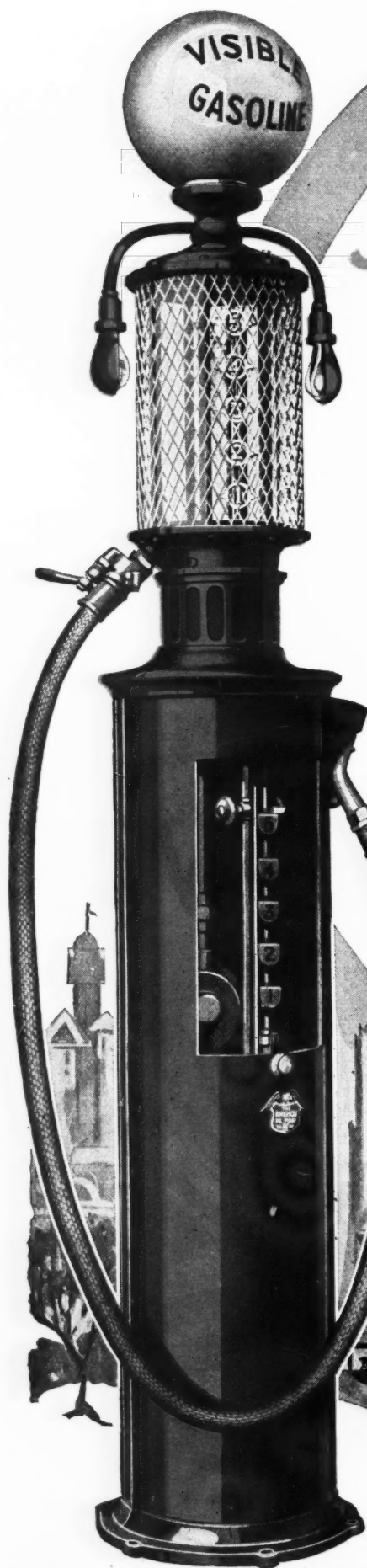
*Also manufacturers of King Bolts, Tie-Rod Bolts, Spring Bolts, Bushings, Tappets and Starting Cranks*

EXPORT DEPARTMENT: 130 West 42nd St., New York, U. S. A.

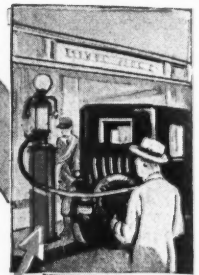
Cable Address: "THOMPRO—NEW YORK"

# Silcrome Valves





# The new American visible



**W**HEN the American Company decided to make a moderate-priced pump, it resolved, first, that the product must be worthy of the American name and reputation.

It must excel in operation, in construction, in appearance, it must contain more *real pump value* per dollar of cost. And it must be all this *before* it is offered to the public. The pump here shown is the result.

It meets every specification given above. Prominent oil companies have tried it out, subjected it to severest tests—and then placed quantity orders.

It's a worthy member of the American family.

This pump is fitted with overflow that exactly measures gallonage wanted.

Handle turns continuously in one direction—not back and forth.

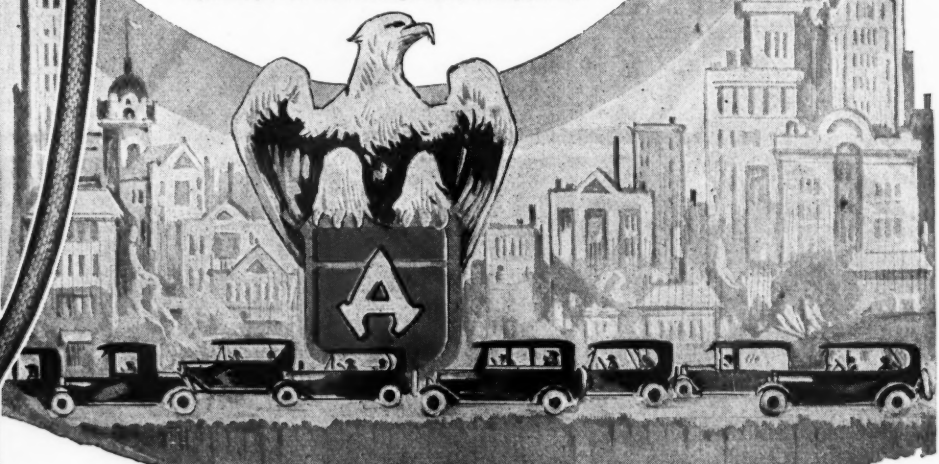
Swift and easy to operate, attractive in appearance—a thoroly American product thruout.

Better write for more information and prices.

**The American Oil Pump & Tank Co.**

1159 FINDLAY ST., CINCINNATI, O.

Export Dept. 549 W. Washington St., Chicago, U.S.A.





HEAT-SHAPED TO INSURE  
PERFECT ROUNDNESS

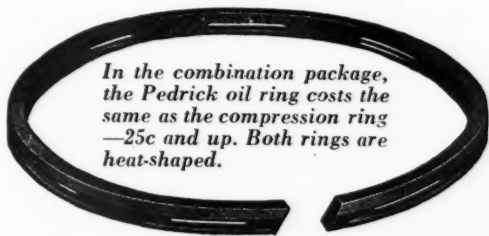
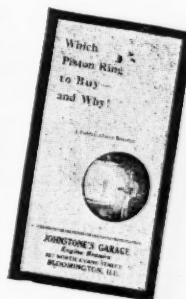
# Pedrick

## HEAT-SHAPED PISTON RINGS

You insure larger profits for yourself, as well as longer satisfaction to your customers, when you install Pedrick rings.

They keep motors new longer—give them back their original power and pep. Larger discounts make them more profitable to you,

*Here's the folder that tells about Pedrick rings, and why they give you best profits and more repeat business.*

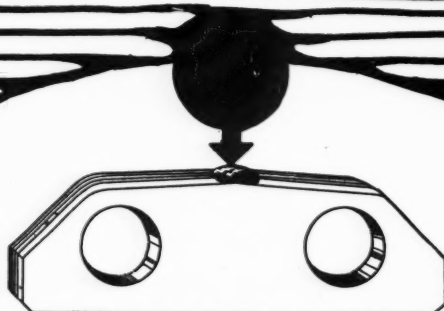


*In the combination package, the Pedrick oil ring costs the same as the compression ring—25c and up. Both rings are heat-shaped.*

although they cost your customers little more than ordinary snap rings.

**Write today for our new 4-page dealer  
bulletin**

**Wilkening Manufacturing Co.**  
Philadelphia



*As a repair man you have many a bearing fitting job where you want to put back a layer of shim stock—after you have taken it off.*

*The National Shim is built up of layers varying in thickness from .003—held together in a compact unit with a drop of solder.*

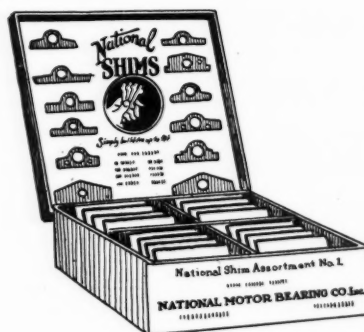
*It is the only built up, ready to use shim that permits you to put back a layer after you have taken it off. And, because there is no solder between leaves, there can be no shim compression.*



To make National Shims easiest to merchandise for dealer and jobber—as well as easiest for the repairmen to use, each set of National Shims is packed in a correctly marked envelope, showing exactly what motor or car each shim is for.

The dealer display cabinet shown here contains 212 sets of shims, covering practically every popular car and motor. For instance, it contains six sets of Buick Shims—four sets of Dodge Shims, etc.

On the cover of the box is shown illustrations and specifications of every shim in the assortment. Retail value of this handsome red lacquer cabinet full of shims is \$84.00. Cost to you is approximately \$45.36.



For the dealer and repair shop who uses fewer shims, we recommend special assortment No. 1 shown above.

It contains 50 sets of shims—each set packed in individual, plainly marked envelope. This assortment contains five sets of Ford shims—and from one to four sets of other type shims. Retail price, \$15.00. Cost to you approximately \$9.00.

Ask your jobber for National Shims—and make sure you get National Shims.

#### NATIONAL MOTOR BEARING CO.

1609 Pine Street, San Francisco, Calif.

1449 South Michigan Avenue, Chicago, Ills.

83 Grand Street, New York, N. Y.

# NATIONAL SHIMS

# The tremendous Success of Protectolite will now be increased tenfold at this new low price

The most convincing proof that the success of this wonderful safety light is the purpose of its makers—we announce a reduction of almost 50% in the selling price of the Protectolite. Was popular at \$8.75—will be a wonderful success at the new price—\$5.00.

Sold \$8<sup>75</sup>  
big at  
Now only  
\$5<sup>00</sup>

## Finest Device for Safety

"Gentlemen: I recently had my automobile equipped with a Protectolite for night driving, and for safety to pedestrians and operators of automobiles on the highways at night. I feel safe in recommending the Protectolite, as the finest device for safety, that I know of."

C. H. Townsend,  
Mgr. of Woolworth's,  
34 Westbourne Parkway,  
Hartford, Conn.

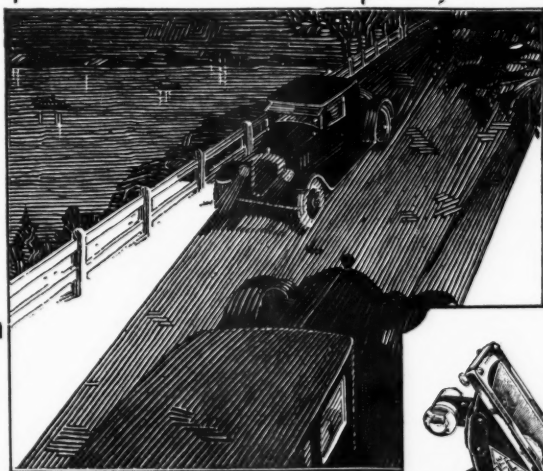
## A Great Success

"Gentlemen: This gutter light is a great success so far as the driver is concerned and I am very glad to tell you about the satisfaction it is giving me."

Frank Irving Cooper,  
Frank Irving Cooper Corp.,  
172 Tremont St.,  
Boston, Mass.

## The Greatest Safety Device Since the Emergency Brake

THINK what this \$5.00 brings to the automobile owner. It brings an assurance of comfort and safety to night driving that has never been there before. Once for all, it ends the worry of meeting with mishap on dark roads—in the blinding glare of approaching cars. It makes the narrowest roads real avenues of safety. It practically ends the danger of collision and running off the road. It reduces to a minimum the danger of running down the pedestrian, obscure in the deep black of night. It means that for \$5.00 the driver can insure from \$500 to \$5000 worth of automobile and the lives of himself and countless others. There is absolute justice in proclaiming \$5.00 spent for a Protectolite the greatest investment in safety you can make.



"Wish to state that the Protectolite is all that is represented. I think so much of it that a \$100.00 bill would not buy it if no other could be obtained."

Respectfully,  
L. M. Church,  
Washington, D. C.

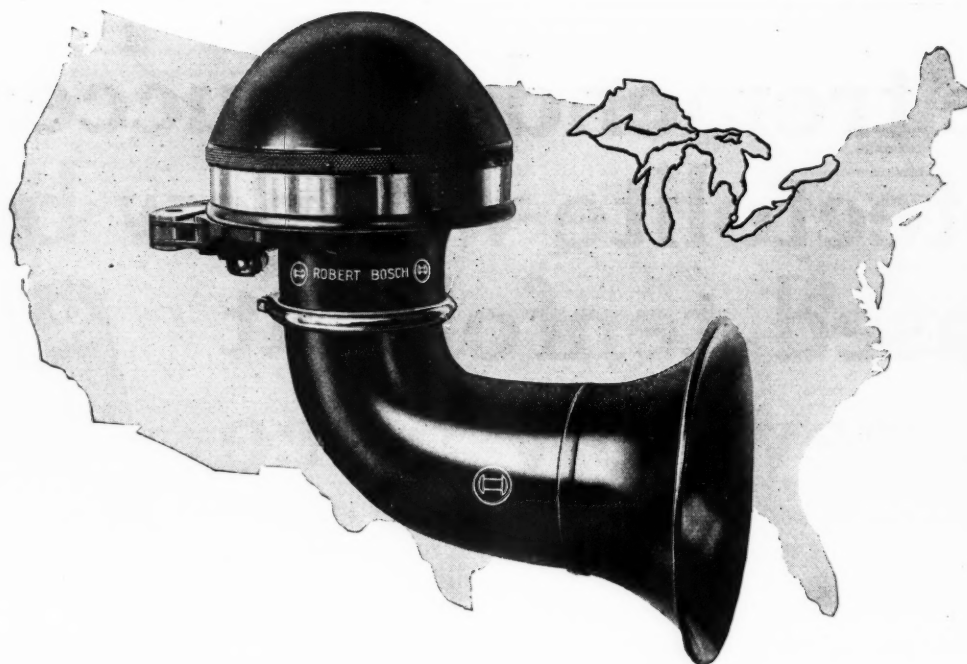


Don't delay. If you are a car owner, get one for life and limbs' sake. If you are a dealer you can make money by doing your trade a life-saving favor. All information write to—

The Protectolite Company  
17 West 60th Street, New York City

**PROTECTOLITE** *makes night driving safe*





This trade mark and the full name, Robert Bosch, are always inscribed on every piece of ORIGINAL BOSCH automotive equipment. Look for these identifications. They are your guaranty of ORIGINAL BOSCH quality as known the world over since 1887.

## All over the country~ the *Original* Bosch Horn is being chosen by the owners of fine motor cars

### WARNING

Horns of which the sound producing mechanism is essentially that of the ORIGINAL BOSCH Horn are being offered to the trade by various manufacturers. The selling or using of such imitations constitutes infringement of the patent by which the Bosch Horn is protected. Infringers will be held strictly accountable.

On broad, smooth boulevards; in the traffic-tangled streets of cities; along far-flung country roads—wherever fine motor cars are driven—you will hear the musical, penetrating tone of the ORIGINAL BOSCH Horn. An efficient—and courteous—warning signal.

Naturally, being an ORIGINAL BOSCH product and, therefore, of unquestioned worth and accuracy, this new, high-frequency warning signal is being profitably handled by many of the country's best automotive dealers.

To such of these merchants who have not already stocked the ORIGINAL BOSCH Horn the invitation to become selling agents is extended. Write for full information to Robert Bosch Magneto Co., Inc., 109 West 64th Street, New York, N. Y. Chicago branch, 1302 South Wabash Avenue.

#### LIST PRICES

"Junior" for motorcycles.....	\$16
"Standard", for passenger cars.....	\$21
"Master" for large cars, motor busses and motor boats .....	\$25

When ordering your stock of ORIGINAL BOSCH Horns, please be sure to specify the model or models desired, and the voltage.

# The Original Bosch

ROBERT · BOSCH · MAGNETO · COMPANY · INC.



## What AC Means to the Dealer

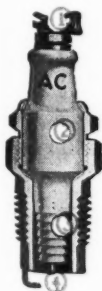
### AC Spark Plugs



More than 80% of all the cars produced in this country, Fords excluded, are factory equipped with AC Spark Plugs. Among these cars are:

Apperson	Dodge	Maxwell
Buick	Brothers	Nash
Cadillac	Durant	Oakland
Case	Essex	Oldsmobile
Chandler	Flint	Paige
Chevrolet	Hudson	Star
Chrysler	Hupmobile	Vellie
Cleveland	Kissel	Westeott
Davis	Marmen	Wills Sainte Claire

### AC 1075 for Fords



One glance tells the whole story — Why the AC 1075 is an especially good plug for Fords—Here are its features:

- 1 Spring Terminal Clip
- 2 Heavy Body Porcelain
- 3 High Temperature Fins—Patented Carbon-proof Porcelain
- 4 Heavy Electrode Forms Natural Oil Drain.

Dealers who carry a good stock of AC products can build a profitable business. The demand is assured because of their use as car equipment.

\* \* \*

Backed by strong advertising.

\* \* \*

They afford you the margin of profit you should get.

AC Spark Plug Company, FLINT, Michigan  
Makers of AC Spark Plugs—AC Speedometers—AC Air Cleaners

AC-SPHINX  
Birmingham  
ENGLAND

AC-OLEO  
Levallois-Perret  
FRANCE

### AC Speedometers

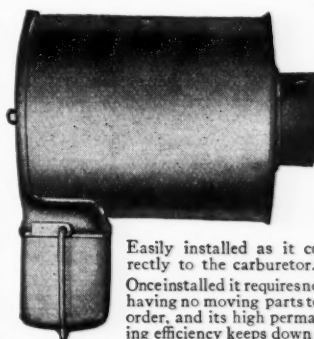


#### The Model for Fords

Miles per hour, miles per trip, total mileage—it tells them all. Simple direct drive is a big improvement over previous types of drives as it does away with the swivel joint. Complete with all attachments and once installed is a source of constant satisfaction. The cost is surprisingly low—\$15. (\$21.00 in Canada.)

That AC Speedometers can be depended upon for trouble-free operation, is evidenced by the fact that they are original equipment on such cars as Buick, Cadillac, Chevrolet, Chrysler, Gray, Maxwell, Oakland, Oldsmobile and GMC Trucks.

### AC Air Cleaners



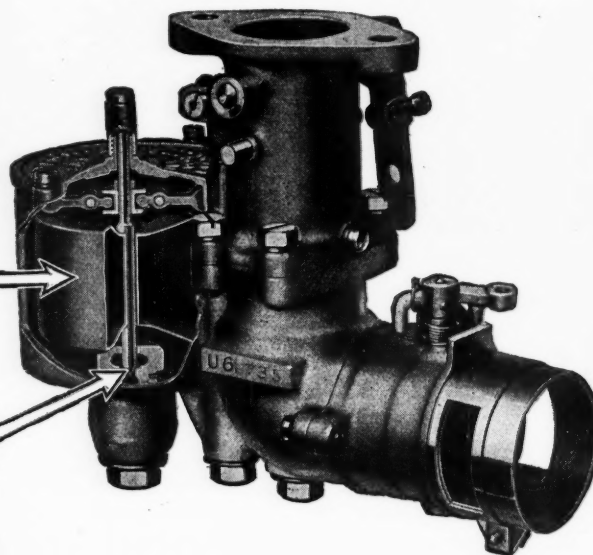
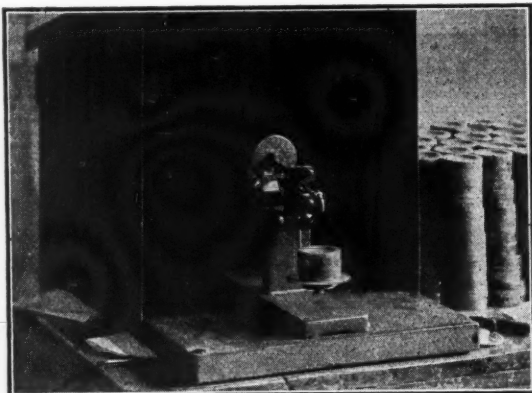
Easily installed as it connects directly to the carburetor.

Once installed it requires no attention, having no moving parts to get out of order, and its high permanent cleaning efficiency keeps down repair bills.

Comes complete with all attachments and is reasonably priced—\$5.00 to \$7.00 (\$7.00 to \$10.00 in Canada) depending on the size required.

**ZENITH**

## The Zenith Float Mechanism and the Tests



(Upper) Zenith floats being weighed. A variance of one gram—1.28 of an ounce—from the specified weight causes them to be scrapped.

(Lower) Zenith needle points being inspected under a microscope which magnifies 144 diameters. This inspection discloses any imperfections however minute, which may remain after grinding.

**ZENITH**  
CARBURETOR

*There is a Zenith, tested and proven, for every motor.*

With such modern instruments and such rigid inspection to guard the gas flow, a Zenith must be frugal—it is no wonder it is known as the economy carburetor.

And yet the speediest and most powerful engines are Zenith-equipped.

### ZENITH-DETROIT CORPORATION

*Manufacturer of*

#### ZENITH CARBURETORS

**DETROIT**

**MICHIGAN**

*Branches:*

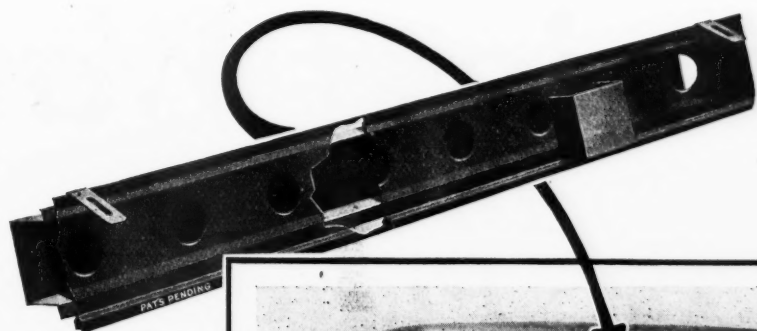
**NEW YORK**

**CLEVELAND**

**CHICAGO**

*Over 1100 Service Stations*





**\$1.50**  
retail



***At last!***  
***a successful ventilator***  
***for all closed cars***  
***3 minutes to install!***

A year-round necessity for all closed cars. Keeps the car interior continually and properly ventilated and free from any poisonous gases. **Gives free circulation of fresh air without drafts.** Keeps windows from frosting and steaming in cold weather. Keeps out rain, snow, sleet and dust.

Made of sheet metal, finely finished and enameled. Looks well on any make of car.

No installation job necessary. Set in place in 3 minutes without special tools. No necessity for carrying different sizes. One universal model.

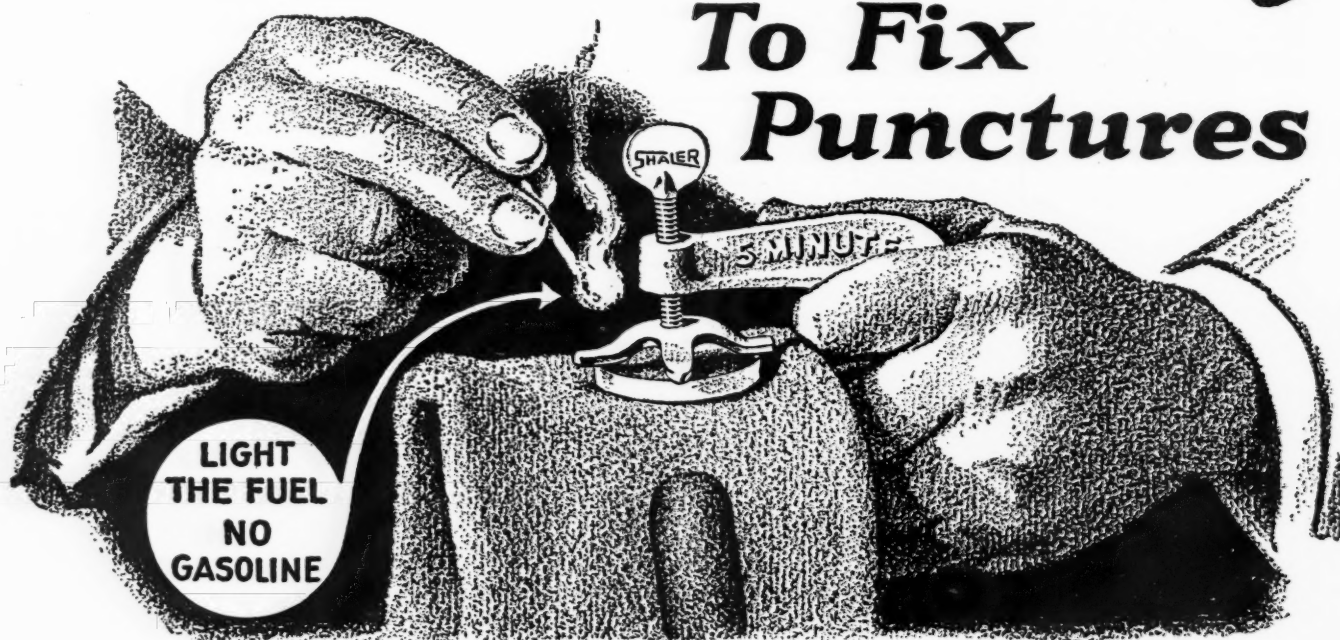
Ask your Jobber or write us for sales plan.

LEWIS MANUFACTURING CO., INC.  
219 Orchard Street  
Sharon Pennsylvania

***Spon***

**AUTO VENTILATOR**  
**— a Lewis product —**

# The Easiest Way To Fix Punctures



## Write today for FREE Window Trim

A big colored display that makes 'em stop, look, and buy.

Put one in your window and it is as good as having your name signed to our advertisements that are appearing right along in newspapers, farm papers, national magazines and the

SATURDAY EVENING POST

## And as easy to sell as it is to use

The Shaler Vulcanizer has been advertised for so many years that most motorists know about it—and are ready to buy from the first dealer who says "Here it is."

And then come the repeat sales. Motorists don't go back to Grandpa's way of sticking on cold patches after they have tried the Shaler. They become constant repeat customers for Shaler Patch-&-Heat Units, and recommend the Shaler to their friends.

The dealer who keeps it out in front and makes it easy to buy, is the dealer who gets the sales.

C. A. SHALER CO., 209 Fourth Street, Waupun, Wis.



# ATWATER KENT

*Ignition for FORDS*



**I**N name, quality, performance and attractive price, ATWATER KENT Ignition for FORDS possesses a sales appeal second to none. Dependability is the keynote of its success.

Combine with this the human desire on the part of every Ford owner to improve his motor—and you have profit-earning possibilities that are practically unlimited.

Old Fords, new Fords—pleasure cars and trucks—all are prospects for ATWATER KENT Ignition. Start now to build up your list of satisfied customers by installing this durable and efficient replacement unit.

ATWATER KENT MANUFACTURING COMPANY  
4733 Wissahickon Ave., Philadelphia, Pa.

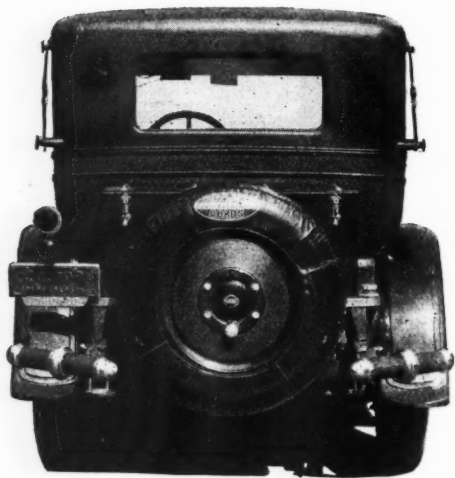
Type LA for Fords  
\$10.80

*Including cables and fittings*





# Over the top with BALLOON BUMPERS



Balloonettes in Pairs for Rear  
\$30

Balloon Bumpers, Front or Rear  
\$25

Today there are two kinds of bumpers — old style and Balloon Bumpers.

The ever increasing thousands of Balloon Bumpers on the Boulevards everywhere proclaim their popularity.

Automobile dealers everywhere are making big profits by adding this line. Send for sample set today at our quantity discount. Return at our expense if not satisfied.

*(Tested and approved by Insurance Underwriters' Laboratories for cars of all weights.)*

**Automobile Equipment Mfg. Corp.**

1908-10-12 Indiana Ave.

Chicago, Ill.



REG. U. S. PAT. OFF.

# New Departure Ball Bearings

For six seasons the almost unanimous choice of racing car designers, builders and drivers—"where the paramount consideration is endurance."



# We Cooperate With You



*This illustration appears in our advertisement, "No Battery Made Will Stand That" appearing in June 13th Saturday Evening Post, and in other widely read publications.*

**W**E render a better type of battery service which you can use profitably in your own business, or recommend to your customers with the assurance that they will receive fair treatment.

**The Willard  
Battery men**



# NIMS

## Pump for Fords

**\$5**

Too  
NIMS PUMP  
for  
FORDSONS  
\$15.

THE Nims Pump fits at the water outlet of the Ford Motor—where it belongs. It can't leak. It doesn't drag. It doesn't interfere with fan assembly. Lubrication is provided for by a recessed reservoir in the drive shaft. A multi-ply drive belt is furnished with each Nims Pump.

If the Nims Pump looks sensible to you, and you'd like to make about a dollar and seventy-five out of each hot Ford that you'll see this summer, order half a dozen Nims Pumps from your jobber. We'll moneyback every Nims Pump you sell with a guarantee of absolute satisfaction.

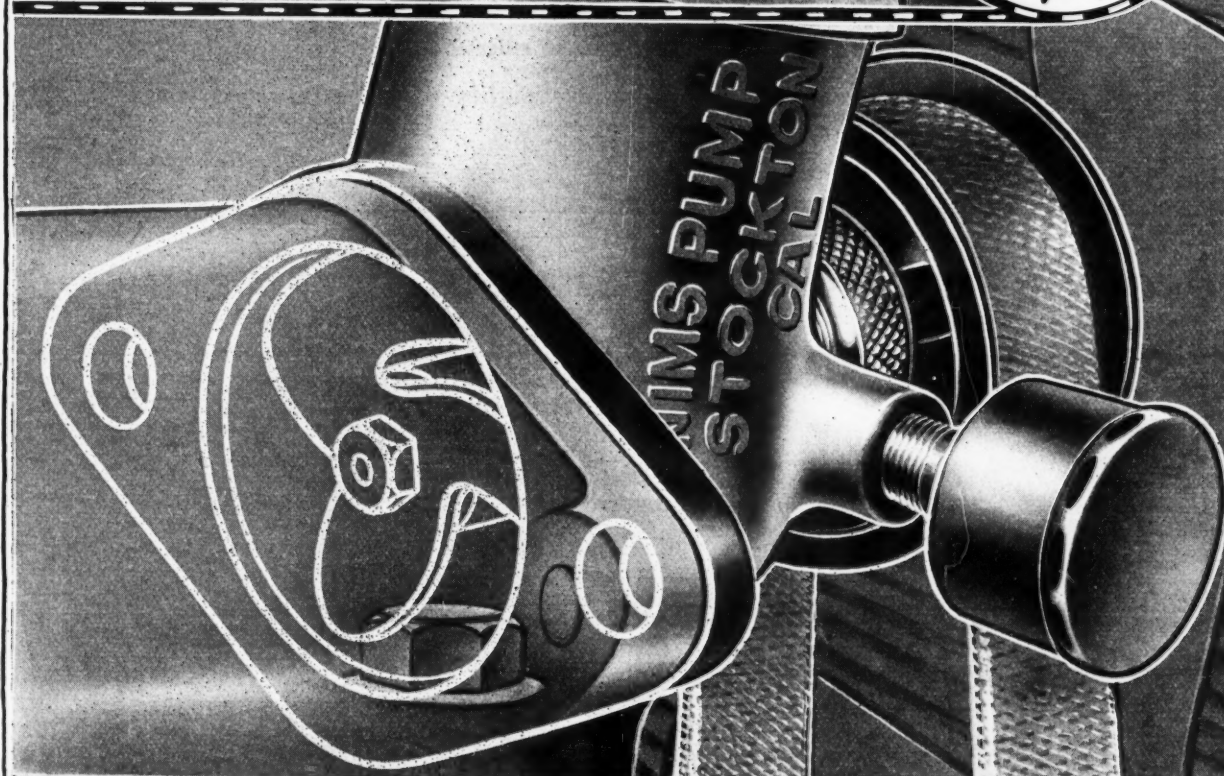
**JOBBER:** Complete warehouse stocks carried at Philadelphia—Quick deliveries.

**NIMS PUMP CO.**  
Stockton, Calif.

Eastern Office and Warehouse,  
201 No. Broad St., Philadelphia, Pa.

3/4 Ford  
of the water supply  
is above  
the NIMS

NIMS PUMP  
STOCKTON  
CALIF.



# Don't Miss a Single Copy!

The very next issue may contain an idea that will be worth many times the price of a subscription! But unless you get a copy of next week's issue, the idea will never mean anything to you!

Every week MOTOR AGE has something new to offer its readers! Every week the automotive trade moves forward! And the man who doesn't read and keep up to date is the man who gets left behind!

## Don't Miss a Single Copy! You Can't Afford to!

A Year's Subscription to MOTOR AGE Only Costs You \$3.00

### *—And Here's What You Get:—*

Fifty-two copies of the only weekly maintenance paper published in America.

A weekly news service that is always up to the minute—all the news while it is news.

The right to use the Readers' Clearing House whenever you have a problem that needs personal attention—a service that is alone worth more than the cost of the magazine.

The real facts as to how other men are succeeding in a business just like yours.

Proven ideas from all over the country—new ones every week.

New car descriptions the minute they are released.

Mechanical specifications, prices, and weights of all American cars brought up to date every week.

## *Subscribe now, and be sure of getting a copy!*

### MOTOR AGE

5 S. Wabash Ave.,  
Chicago, Ill.

**IMPORTANT** MOTOR AGE is published exclusively for the trade. Subscriptions are accepted only from those actively engaged in our field—so please don't forget to include your business card or letter head with this order.

Gentlemen: Enclosed find \$3.00 to pay for a year's subscription to MOTOR AGE, including all special issues published during the life of my subscription.

Name.....

Street and No.....

City.....State.....

Firm Name.....

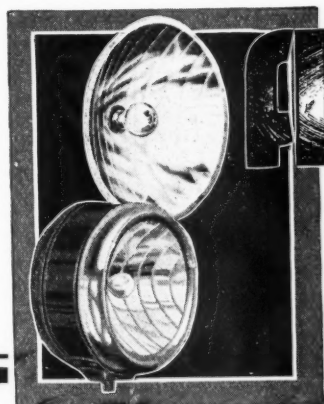
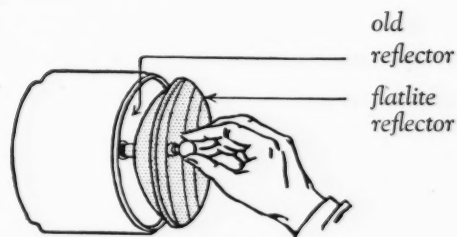
**NOTE—** If you are already subscribing to MOTOR AGE, please hand this coupon to a dealer who is not. He'll become a better competitor from reading MOTOR AGE.



*This simple sketch shows why flatlites sell so easily*

**flatlite** is one accessory that has no sales resistance—they can easily be made an integral part of equipment every car owner has, improving that equipment by a big percentage.

*flatlite goes on without dismantling the lamp. The old reflector stays in and flatlite goes right over it. Plain glass comes with flatlite reflectors to replace old lenses.*



**flatlite**

**REFLECTORS**  
for replacement in any headlamp  
**HEADLAMPS**  
to fit all cars

**flatlite** reflectors are sold for replacement in any headlamps. flatlite headlamps are sold for all cars. Which ever way you sell flatlite your customer will get the greatest "money's worth" he ever experienced.

**"flatlite reflectors bring daytime safety to nighttime driving"**

THE AMERICAN FLATLITE CO.

Department A

Reading Road at Dandridge St.

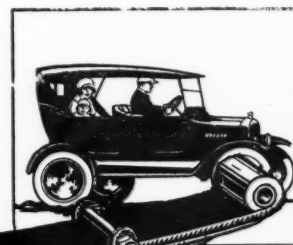
Cincinnati, Ohio





1880

## Our Experience Means Your Satisfaction



1925

Behind every Titanic Spring is the experience of forty-five years devoted to the manufacture of the best springs that can be made and the constant search for methods to make them even better.

It is this experience and its results that have given Titanic Springs a reputation for service, and outstanding durability that are unequalled. Titanic Springs always satisfy.

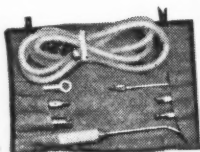
THE TUTHILL SPRING CO., 760 Polk St., Chicago, Ill.

*Quality Spring Builders for Forty-Five Years*

# TITANIC

# SPRINGS

*Alloy Steel Throughout*

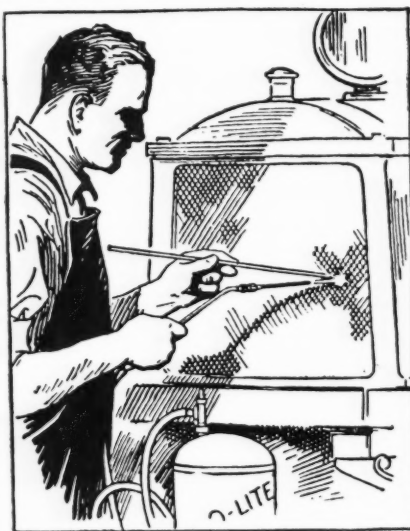


The Prest-O-Lite 5-in-1 Outfit, packed complete in attractive canvas case.



Torch handle with "A" Torch Head—also long and short "B" Torch Heads; "C" Torch Head and Soldering Iron Attachment.

## Every garage has a thousand uses for this "heat outfit"



THE Prest-O-Lite 5-in-1 Outfit gives you equipment for every brazing, soldering, melting and fusing job.

There are four different-size torch heads each gives an accurately controlled flame of intense heat. There is also a most convenient soldering iron. It gets hot in an instant and stays hot. No pre-heating or danger of cooling off before the job is done.

All this equipment operates on acetylene gas from Prest-O-Lite Tanks—the handiest source of heat in the world. Nothing to get out of order—no pumping or generating. Just turn it on—and it's ready.

You'll find this 5-in-1 equipment ideal for all your heating needs. It costs

only \$7.50, complete with rubber hose, tank wrench, etc. Buy one tank of gas. When it is empty, any of the thousands of Prest-O-Lite Service Stations will give you a full tank in exchange—at a nominal cost for the gas only. Ask about this equipment at any Prest-O-Lite Station, or write us.

THE PREST-O-LITE CO., INC.  
INDIANAPOLIS, IND.

Small Tank Sales Department 5

New York

San Francisco

In Canada: Prest-O-Lite Company of Canada, Ltd., Toronto, Ont.



The 5-in-1 Outfit, rolled in a neat convenient kit.

The Prest-O-Lite Tank—the same kind that is used everywhere today for lighting heavy trucks.



**Prest-O-Lite**



Van says—"You can't see what's in a good belt, but you soon see the insides of a bad one."

## The Belt That's Built to Go Around a Curve

Gilmer Super-Service Fan Belts are designed by engineers. Take the new Moulded V Shape—

A long series of tests have shown that a thick belt running around a pulley is up against the same problem as a car turning a curve. Builders gave the car a differential, but left the belt to rack itself to shreds.

Now Gilmer makes a belt planned by engineers. Its internal structure works like a differential—and *it can't wear itself out.*

Gilmer backs this quality with quality appearance — attractive packages, colored window displays and a fine looking free cabinet that speeds up sales, saves you shelf room, prevents belts from getting lost, and shows you when your stock of any size is low.



### FREE DISPLAY CABINET

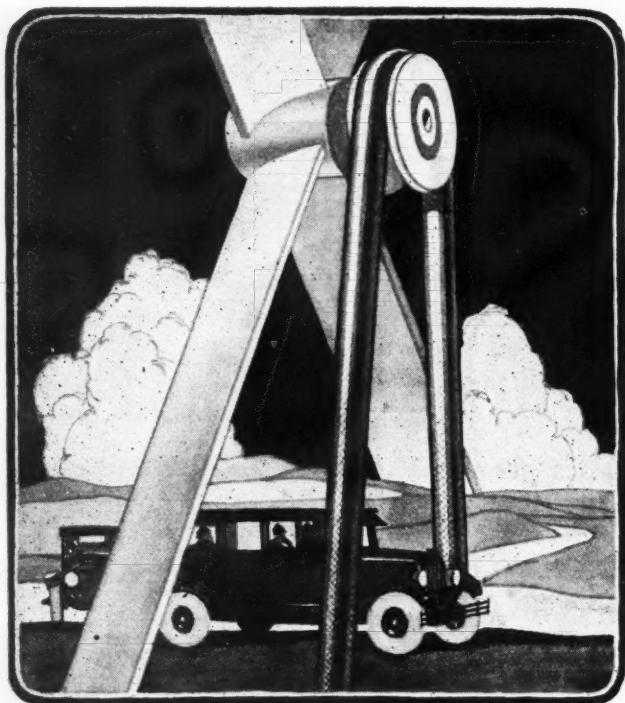
All you have to do to get this free cabinet is to order Assortment No. 100 or Special Assortment No. 45. These belts cost you exactly the regular price. Your jobber can tell you all about it.

**L. H. GILMER CO.**  
Tacony, Philadelphia.

**SUPER-SERVICE  
FAN BELTS**

**Gilmer**



**VEE ROUND**

Made for Grooved Pulleys. Self adjustable — will wedge itself tightly and firmly into the groove regardless of the angle of pitch. Made of rubber-saturated fabric, wrapped endless around a flexible rubber core. No strings or cords to break.

**FLAT TYPE**

Made for Regular or Crowned Pulleys. Fabric cut on the bias to give greater strength. Vulcanized in a special cover jacket that prevents ply separation. Oil, heat and waterproof. The sure, firm grip of the belt practically eliminates slipping.

**FAN BELTS****THE DEFINITE REQUIREMENTS**

—of motorists, dealers and jobbers are fulfilled in *Rie Nie* Fan Belts and in each of the quality products made by Durkee-Atwood Company.

Motorists demand good merchandise at a reasonable price. Dealers demand from jobbers the highest-grade products, with a reputation back of them for service, yet allowing them a liberal profit—and made by an established company, financially responsible to make their guarantee "good".

Jobbers demand from manufacturers a product that will stand up in every way, assistance in merchandising it to their dealers—and a substantial margin of profit.

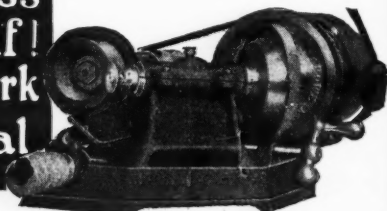
Each of these definite requirements are met in *Rie Nie* Fan Belts, and in each of the proved quality products made by this company.

**Specialize in *Rie Nie* Fan Belts—Recommend Them!**

Your investment is smaller—for you need carry fewer sizes. Your turnover is quicker—for these *Rie Nie* Fan Belts have established an enviable reputation for themselves among motorists. Your profits are larger—for these belts are priced reasonably, and therefore sell faster. If your jobber cannot supply you, write us direct—now!

**DURKEE-ATWOOD Co.**  
MINNEAPOLIS MINN. U.S.A.

**Costs Less  
than Half!  
Better Work  
Free Trial**

**CROWE  
CUP WHEEL  
VALVE  
REFACER**

Price Only  
**\$85.00**

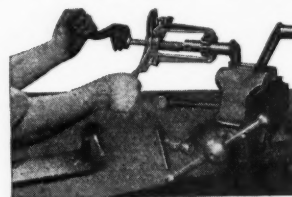
Complete  
**EASY TERMS**

**T**HE astonishingly low price of this machine puts it within the reach of every auto repair shop. The big shop can give better service with the Crowe. And with this machine the small shop is fully equipped to give the same high grade valve service as the big shop.

But aside from its money-saving price, the Crowe has many special features that make it preferable.

We would like an opportunity to give you the complete details of this improved valve face grinder, our easy extended-payment terms, and our *Free Trial Offer*. Will you write us today for this information?

**LISLE MANUFACTURING COMPANY**  
CLARINDA, IOWA

**The Puller You Want—**

**Pulls Wheels, Gears, Fly-Wheels,  
Ford Steering Wheel, Timing Gears, Etc.  
With Ease and Safety!**

Two sizes of Crane Pullers do the majority of the pulling jobs in the general service shop. There are also larger models for big truck and bus jobs.

The Crane pullers are heavier and stand up under continued abuse. They are positively guaranteed against breakage in any part.

At your dealer's or direct if you mention your dealer's name. Write for illustrated folder.

**CRANE PULLER COMPANY**  
South Deerfield, Mass.





# Put your car on a 100% Efficiency Basis ~

*and keep it there*

There is just one way.

You must have a carburetor designed expressly for your particular type of motor. Furthermore, it must be a carburetor that operates along the most efficient lines of carburetion.

Stromberg Specially Engineered Carburetors are built to meet the specific needs of each make and model of automobile.

They develop *all* the energy that can be produced from your fuel. You get more power—easier starting—snappier pickup—greater dependability—at the lowest of gasoline consumption and cost.

139 Representative American manufacturers use Stromberg Carburetors as standard equipment.

There are over 3000 Sales and Service Stations in the United States.

## What Do You Think of This Ad?

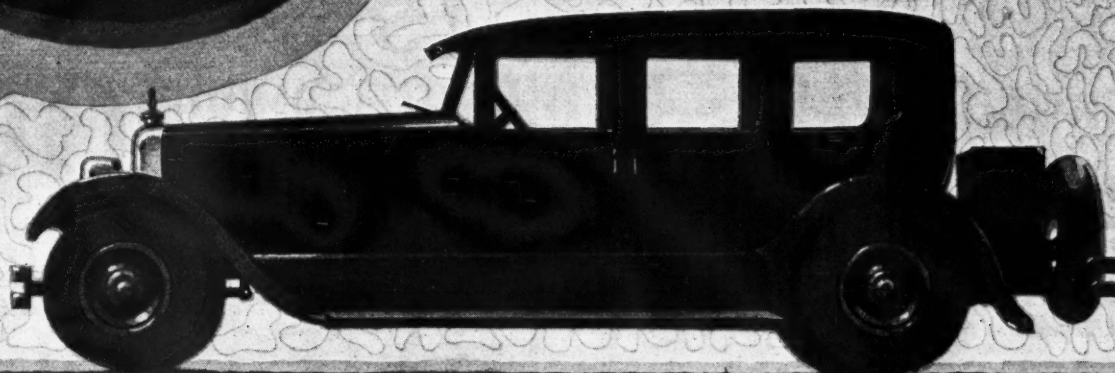
—one of a series appearing in the Saturday Evening Post.

Attractive— isn't it? And, sure to create sales—because car owners, the country over, are looking for the kind of service Stromberg Carburetors actually render.

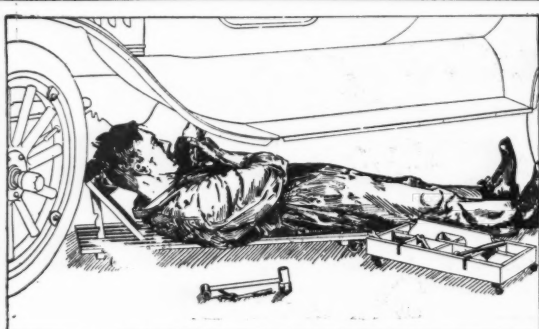
It is advertising that stimulates quick buying action, and is backed by a product that keeps customers 100% satisfied.

*[The productive sales plan will be mailed upon request. It will pay you to write for it.]*

**STROMBERG MOTOR  
DEVICES COMPANY**  
65 E. 25th STREET .. CHICAGO



# Special Stromberg Carburetors

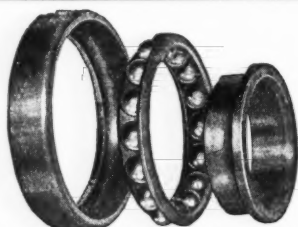


### Koch Kreeper No. 3

Price,  
East of  
Rockies,  
\$4.00;  
West of  
Rockies,  
\$4.50;  
Postage  
Prepaid.

Patent adjustable, padded headrest, easily operated. Long comfortable curved bed, finished in waterproof varnish. Equalled by none. If your jobber hasn't them, write us direct.

**THE FORT RECOVERY STIRRUP CO.**  
Fort Recovery, Ohio, U. S. A.



ANGULAR CONTACT THRUST BEARINGS.  
ANGULAR CONTACT RADIAL BEARINGS.  
These Bearings furnished to your requirements.  
Send us your blue prints and inquiries.

**The Bearings Company of America**  
Lancaster, Penna.

Western Sales Office,  
1012 Ford Bldg.,  
Detroit, Mich.

## A New Chapter Every Thursday

Each issue of **MOTOR AGE** is a new chapter, continuing the story of the development of the industry.

And for those who apply the new ideas it gives them, it also continues the story of the development of their individual success.

Read **MOTOR AGE** every week.

# MOTOR AGE

5 So. Wabash Ave. Chicago, Ill.

The heat is there—why not use it?

## PERFECTION MOTOR CAR HEATERS

The Perfection Heater & Mfg. Co., Cleveland, O.



### ARROW HEAD

Pistons, Piston Pins, Axle and Drive Shafts are made according to rigid specifications.

They are dependable.

**ARROW HEAD STEEL PRODUCTS CO.,**  
Minneapolis, Minn.



Covered by Several  
Patents  
No. 68 Qt.  
No. 68 Ft.  
Polished brass  
reservoir.

**YOU SHOULD ALWAYS**  
consider the quality and the merits  
of the

### "ALWAYS RELIABLE"

when you order torches and furnaces. These articles have given perfect satisfaction since 1876, and will continue to do so in the future.

If you have not stocked this line in the past, you should do so immediately; then watch your sales increase.

Jobbers can supply from stock, or will gladly order for you.

**OTTO BERNZ CO. INC.,** Newark, N. J.

OFFICES IN NEW YORK CITY, SAN FRANCISCO, LOS ANGELES,  
SEATTLE, HELENA, MONT., AND ST. THOMAS, ONT.

**BRUNNER**  
AIR COMPRESSORS  
**FREE**

Write for the Book  
**"AIR PROFITS"**

describing many new uses for compressed air. Shows how to make an air compressor earn greater profits.  
**BRUNNER MFG. CO.**  
UTICA NEW YORK



## Armatures Rewound

Prompt Service

Low Prices. Ford Generator  
or Starter rewound, \$1.60.

**Warren J. Bauman Co.**  
Lock Haven, Pa.



Work  
Guaranteed



## SMOKELESS CARS DRY PLUGS

Guaranteed with  
**MEGSON RINGS**  
4 years' tested service  
Your jobber—at once  
or write direct

**Megson Piston Ring Co.**  
807-11 Flatbush Ave., Brooklyn, N. Y.

**PROTECTOMOTOR** 99 <sup>9</sup>/<sub>10</sub>  
REG. U.S. PAT. OFF.  
Perfect Positive Protection  
Filters all dust, sand and grit out of air supply to carburetor and motor. Write us for facts.  
**STAYNEW FILTER CORPORATION**  
Rochester, N. Y.

**EFFICIENT**

## GATES VULCO

Fan Belts and Radiator Hose

Made By

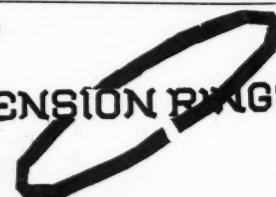
*The World's Largest Makers of Fan Belts*

## Stop Piston Slap

Don't Rebore—G-H Tension Rings stop slap and oil pumping. Make and keep old motors running like new. It's all in the metal—they retain their TENSION.

**G-H TENSION RING CO., Inc.**  
Howard St. & Armory Pl., Baltimore, Md.  
Stop Oil Pumping

**G-H TENSION RINGS**





# TENAX TANPAC Sheet Packing

In the case of 25 or more maintenance operations on any car, you will be best served by TENAX or TANPAC Sheet Packing. TENAX is a compressed asbestos sheet for use where there is heat. TANPAC is a prepared fibre sheet for use where there is no heat. In sheets, rolls or gasket form.

**Advance Packing & Supply Co.**  
808 Washington Blvd. Chicago, Ill.

## SMOOTH-KUT

(Trade name Registered)  
Expansion Reamers



Pat. Applied For  
The only FULL spiral flute expansion reamers made. They cut round and smooth without chatter. They keep their edge longer. They have a wider range of expansion.  
Studebaker, Velie, Franklin, Lycoming, Muskegon and others use them in production.

Insist on the name, SMOOTH-KUT, beware of inferior imitations. Order through your jobber—singly or in sets.

**Millersburg Reamer & Tool Co.**  
Millersburg, Pa.

OVER 1,000 AUTOMOBILE REPAIR SHOPS ARE  
MAKING MONEY WITH

# Simplicity

PRECISION MACHINERY AND TOOLS

Write for Literature, Low Prices and Terms on Simplicity Reborer and Grinder—Valve Grinder—Crank Pin Tool—Re-Seating Cutters and Pilots.

Ask for a "free" demonstration  
in your own shop on one of  
your own jobs.

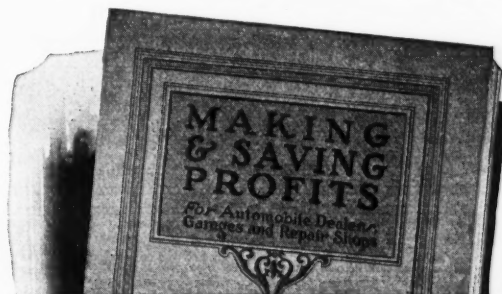
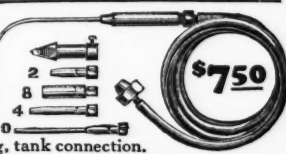
**SIMPLICITY MFG. CO.**  
110 Spring St.  
Port Washington, Wis.

## TURN WASTED TIME INTO MONEY!

Every Purchaser Finds Numerous Uses for the  
**Torit Acetylene Torch No. 13**

Uses Acetylene Only. No oxygen or air pressure required; tips suck in air. Simply connect to Presto auto tank, light gas, and the outfit is put to work. Beats anything you ever tried for soldering, heating, melting or light brazing. Consists of 4 tips for different kinds of work, soldering copper, 5 ft. tubing, tank connection.

**ST. PAUL WELDING & MFG. CO.** 169 Third St., St. Paul, Minn.



## This Book Sent Free

Free to any garage or repair shop owner or manager who will write for it on his business stationery.

Articles on—

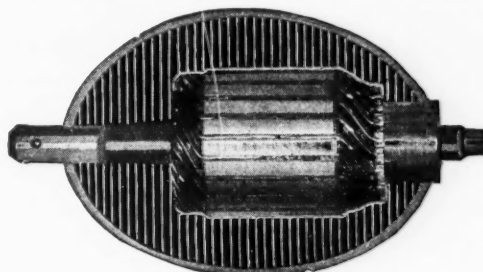
Sales Campaigns,  
Battery Departments,  
Service Departments,

Tire Departments,  
Used Car Problem,  
Stock Room Records,

Preventing losses on gas, oil, etc.

Simple, practical business suggestions that will show you how to safeguard your entire establishment.

**Comfort Printing Specialty Company**  
101 N. EIGHTH ST. ST. LOUIS, MO.



## Rewinding 'em Right!

102 operations, careful inspection, safe packing—we don't take a chance in guaranteeing Fredericks Rewinds for 90 days. So the garageman's profit is safe—repeat business sure. Let us send the price list.

FORD Generator Armatures Rewound.....	\$1.50
FORD Starter Armatures Rewound.....	1.50
ALL OTHER TYPES TWO UNIT Generator Armatures Rewound.....	3.25
ALL OTHER TYPES TWO-UNIT Starter Armatures Rewound.....	3.25
ALL TYPES MOTOR GENERATOR Armatures Rewound.....	8.00

GUARANTEED to give the same satisfaction as new armatures.

The H. M. Fredericks Co., Lock Haven, Pa.

**FREDERICKS**  
Rewinding Service



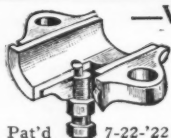
# Kawneer

SOLID COPPER  
STORE FRONTS

Write for Special Book Garage Front

THE KAWNEER CO., 2224 Front St., Niles, Mich.

## TAKE THE END-PLAY OUT!



Pat'd 7-22-'22

### —WITHOUT PULLING THE MOTOR

THE C. A. ADJUSTABLE CENTER BEARING CAP corrects Ford crankshaft end play and sets magneto for highest efficiency without removing the motor. Easily and quickly installed. Guaranteed for one year. List price \$3.75. Ask your jobber or dealer or write us direct.

ADJUSTABLE BEARING CO., Inc.  
Dept. M. Brazil, Indiana



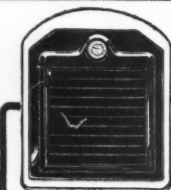
### EKLA All-Rubber Radiator Hose

—is tough and long-wearing—not easily damaged by heat, oil, vibration or radiator compounds. Sold in cut lengths for Fords and 3-foot lengths, all sizes with inch markings. EKLA prices allow unusual profits to the trade.

THE ECLAT RUBBER COMPANY  
Cuyahoga Falls, Ohio

## Johns-Manville

ASBESTOS BRAKE LINING



Any Motor Will Run Better With A  
PINES AUTOMATIC

## WINTERFRONT

Splendid Profit, No Servicing  
There is only one Winterfront. It is made by Pines. Distributors have stock for immediate delivery. Write factory for name.

Pines Winterfront Co., 412 N. Sacramento Blvd., Chicago.



Better Original Entry Systems Stop Your Loss of Profit. Let Amsaboco Products help you—made by American Sales Book Co., Ltd., the largest manufacturer in the world of sales check books and other profit saving systems. Write today for information with no obligation.

American Sales Book Company, Limited Elmira, New York

Branch Offices in all large cities.



### Pump Shaft Leaks Permanently Repaired

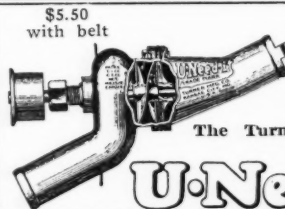
Conneaut Plastic Metallic Packing makes a smooth metal bearing for pump shafts. Practically frictionless. Adjustable like a bearing. In one and 5 lb. cans. A really wonderful packing producing exceptional results.

Conneaut Packing Co., Conneaut, Ohio



## Thirty-seven BRANCHES

AHLBERG BEARING COMPANY  
321 EAST TWENTY NINTH STREET, CHICAGO ILLINOIS



\$5.50  
with belt

The Big Seller in the Ford  
Pump field—at a new low  
price. Get our dealer plan.

The Turner Mfg. Co., 31st and Roanoke Rd.  
Kansas City, Mo.

U-Need-It ROTARY PUMP  
for FORDS



Ernie Hall says:

"You can't hold compression or stop oil pumping by putting round rings in an oval cylinder. The Hall is the only Hone guaranteed to make an oval hole round as well as parallel."

THE HALL MFG. COMPANY

434 Dorr Street

Toledo, Ohio



Curtis Pneumatic  
Machinery Co.

1527 Kienlen Ave.  
St. Louis, Mo.

## The Money-Making Line— WILLYS-OVERLAND

Fine  
MOTOR CARS



Tempered and nickel plated  
by our own exclusive process.  
Maximum strength,  
lasting beauty of finish.  
Write for catalog.  
760 S. Pierce St. Milwaukee, Wis.

### The SKINNER OIL RECTIFIER

More than a new accessory, a necessity. Makes one filling of oil good for 2500 miles or more. Prevents crankcase dilution. Prevents oil pumping. Improves lubrication, thus saving fuel.

Profit by the interest this device is creating among car owners.

Write for complete details.

THE MASTERCRAFTS CORP.  
Brattleboro Vermont

## WEL-EVER

### "OIL CONTROL" PISTON RINGS

The Motor Necessity That Has Made Good  
Backed by Seven Years' Satisfactory Service  
THE WEL-EVER PISTON RING CO., TOLEDO, OHIO  
Sold most everywhere. If your dealer cannot supply you write us.

## DECALCOMANIA

We are manufacturers of transfer products for wood, glass, leather and metal. Special designs made to order on short notice, tell us what you want and we will submit sketches and prices.

We stock a complete line of Automobile Initials consisting of over 40 different styles and sizes. Write us for prices.

### UNION MANUFACTURING COMPANY

112 South High St.

Akron, Ohio



## UNITED STATES Portable Electric DRILLS

Built by the old-  
est maker of  
Portable Electric  
Drills in the  
World.

Ask for  
Catalog 105

THE UNITED STATES ELECTRICAL TOOL CO.  
Cincinnati, Ohio, U. S. A.

## RAMCO Cushion INNER RINGS

fit behind piston rings and keep them in perfect contact with the cylinder walls at any motor speed or temperature.

RAMSEY ACCESSORIES MFG. CORP., ST. LOUIS, MO.

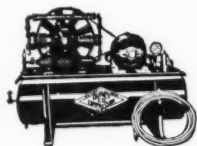
Transmissions  
and Clutches



Trucks, Busses  
Passenger Cars

QUICK SERVICE ON COMPLETE UNITS OR PARTS

**BROWN-LIFE GEAR CO.**  
SYRACUSE, N. Y.



## Model G-16 Quincy Silent Air Master

Manufactured by

**Quincy Compressor Co.**

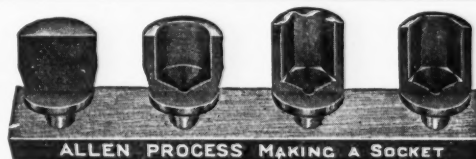
Name Formerly Wall Pump & Compressor Co.  
217 Maine Street, Quincy, Ill., U. S. A.



## QUALITY—PROFIT—TURNOVER American Hammered Piston Rings

American Hammered Piston Ring Company  
Baltimore, Maryland

Cold-  
Drawn  
Sockets



ALLEN  
Wrench  
Sets

The Allen Manufacturing Company, Hartford, Conn.

## BIG MONEY IN THIS SERVICE

Dealers and shops make big money through the control of a franchise which entitles them to the exclusive use of the patented "KLEAN RITE" system of washing and polishing automobiles.

This system has turned a job into an impressive, highly profitable business.

Write for full particulars

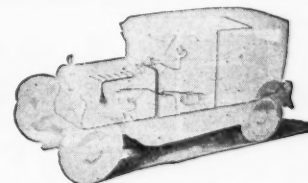
**Klean-Rite Auto Laundry Company**

1710 East 75th St.

Chicago, Ill.

**Packard  
Cable**

The Packard Electric Co.  
Warren, Ohio



## The Adams Adjustable Foot Rest

Adjusts comfortably and easily to most convenient height for any driver's leg. Foot lies in normal restful, uncramped, safe position. Big, fast seller. Senior, \$3.50. Junior, \$1.25. Ask your jobber.

**Adams Mfg. Co.**

Galesburg,

Ill.

## MONOGRAM ORIGINAL SELF LOCKING RADIATOR CAP

THE KINGSLEY-MILLER CO.  
Successors to  
(General Automotive Corporation, Chicago)  
600 West Jackson Boulevard - Chicago

### CLASSIFIED ADVERTISING

#### PARTS

#### AUTO PARTS

SAVES 50% to 75% ON ALL CARS

New and Used Gears—Springs and Axles—Cylinders—Motors—Rear Systems, etc. Wire or Write

INDIANA AUTO PARTS CO.  
316-18 NO. ILLINOIS ST. INDIANAPOLIS, IND.  
LARGEST CAR WRECKERS IN INDIANA

#### HOUSE OF A MILLION AUTO PARTS

The largest stock of new and used car and truck parts in the world. We have everything. Always mention model and serial number in order. Write us. All inquiries answered promptly.

DOUGLAS AUTO PARTS CO., INC.  
2003-5-7-9 South State St., Chicago, Ill.

#### DOWMETAL PISTONS

Lighter, stronger, and longer wearing than aluminum or iron. Can be fitted with bronze bushings in the wrist pin holes same as in iron pistons. Dowmetal has no permanent growth. The expansion is little more than iron.

SEND FOR PARTICULARS

LAMBERT & MANN CO.

Cylinder and Crankshaft Grinding  
215-21 N. Wood St. CHICAGO Phone West 4918

### PATENTS & PATENT ATTORNEYS

#### PATENTS

Secured, Trade-Marks and Copyrights Registered

Prompt service. Highest references. Established 1864.

Milo B. Stevens & Co., Registered Patent Attorneys.

Offices: 639 F St., Washington, D. C.

10 Monadnock Block, Chicago, Ill.

Attorney-at-Law and Solicitor of Patents

C. L. PARKER

Formerly Member Examining Corps, United States Patent Office

American and foreign Patents secured. Searches made to determine patentability and validity. Patent suits conducted. Pamphlet of instruction sent upon request.

McGill Building, WASHINGTON, D. C.

INVENTORS—Manufacturer having sales organization covering every state and foreign countries desires marketable article on royalty basis. During past 5 years have paid to patent owners over \$100,000 in royalty on articles we have marketed. Address Box 6229, Motor Age, 5 S. Wabash Ave., Chicago, Ill.

#### HELP WANTED

SALESMAN WANTED TO SELL INCANDESCENT AUTO LAMPS ON A COMMISSION BASIS. GOOD OPPORTUNITY. WRITE BOX 6232, MOTOR AGE, 5 S. WABASH AVE., CHICAGO, ILL.

### HELP WANTED

Salesmen wanted part or whole time. Make \$30.00 to \$60.00 daily. Sell farmers. Season starting. Must have \$125.00 and car. Moor, 810 Marquette Ave., Minneapolis, Minn.

#### SITUATIONS WANTED

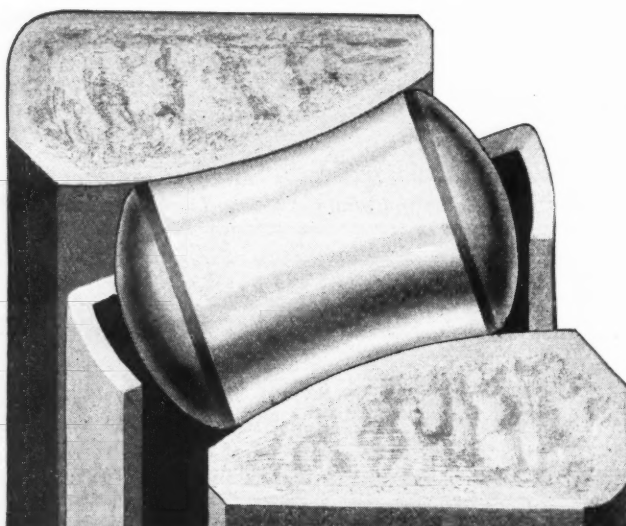
Man who has had thirteen years' experience in the automobile game, desires connection with manufacturer of special tools or accessories, for territory in Central Ohio. Address Box 6230, Motor Age, 5 S. Wabash Ave., Chicago, Ill.

#### BUSINESS OPPORTUNITIES

PISTON RING BUSINESS—For Sale: Entire stock, machinery, office fixtures, furniture, patent rights, good-will and trade name of Krasberg Piston Ring Company, manufacturers of famous V-Plex Piston Rings. Stock includes over 125,000 rings completely finished and packed. Machinery includes lathes, grinders, drill-presses, profiler, milling machines, motors, gasoline motor, etc. For details and inspection, see C. R. Davis or R. E. O'Dea, CHICAGO TITLE & TRUST CO., 69 W. Washington St., Chicago.

FOR SALE—Accessory & Tire Store in city of 15,000 population. Will sell at a sacrifice. An excellent opportunity to purchase an established business in a live community in Indiana. Owner wishes to retire. Address Box 6235, Motor Age, 5 S. Wabash Ave., Chicago, Ill.

Good garage for sale located on Wisconsin Road 13 and near Road 73. Building and tools \$18,000.00. Reason for selling on account of health. A good location in Wisconsin. Address Box 6234, Motor Age, 5 S. Wabash Ave., Chicago, Ill.



# SHAFER

## Self-Aligning ROLLER BEARING

PAT. & PATS. PENDING



ALLIANCE MOTOR CORPORATION  
100 EAST AVENUE  
ROCHESTER, NEW YORK



Feb. 28th, 1925.

Shafer Bearing Corp.,  
Chicago, Ill.

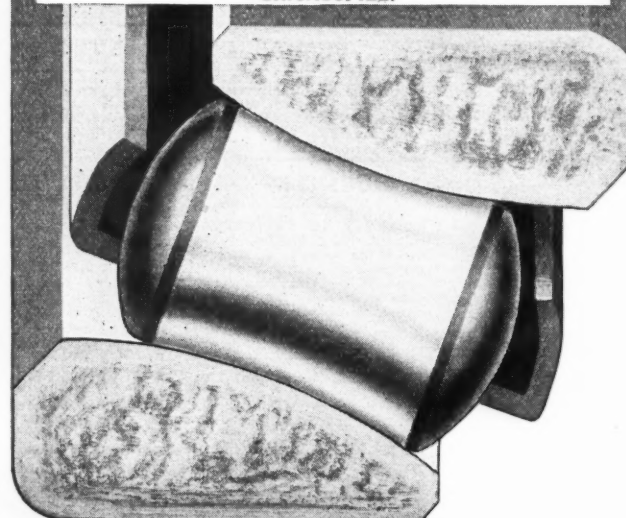
We wish to assure you of our appreciation of the service Shafer Bearings have given us.

After using them in our Maxwell cars for the past two years, we feel that we have given them a pretty fair test as to service and endurance. Our experience has been very satisfying and we are pleased to recommend them to the most exacting dealer as we feel that they will not fail to give first-class service.

Yours very truly,  
ALLIANCE MOTOR CORPORATION  
*E. L. Grace*  
Parts Department

ELG/B

SHAHER BEARING CORPORATION  
6501 WEST GRAND AVENUE  
CHICAGO, ILL.



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# What my friend Pete

***has learned about his  
fan belt business***



I GOT my friend Pete to check up the number of Graton & Knight fan belts he sold last year. The figures proved that Graton & Knight belts, with no sales effort, were showing a neat, pretty profit.

Right then Pete tumbled to the fact that he should push this paying, fast-selling line. Now he has them out where customers can see them. Tells me he'll sell twice as many this year.

Of course Pete uses our *quick turnover system*. Endless belts for the popular cars. Roll belting, which can be cut to fit the others. This keeps investment low, turns stock quickly and increases profit.

Pete finds Graton & Knight Flat, "V" or Link "V" Belts give his customers better service. Their special leather resists oil, dust, water and motor heat. They grip tight at low tension. Are easy on bearings. Require minimum adjustment.

Our sales proposition, with the handy display rack and quick turnover system, puts new pep in your fan belt business. Write today for full details of this interesting, profit-making plan.

**THE GRATON & KNIGHT MFG. CO.**

*Tanners—makers of belts and other leather products*  
Worcester, Massachusetts

# GRATON & KNIGHT

Standardized

## LEATHER BELTING

## *Writers who mould automotive thought*

# *Interesting Personalities in a Great Editorial Organization*

This is an announcement of a forthcoming series of brief sketches dealing with the personalities of some of the men who constitute what is immeasurably the greatest and strongest editorial organization in the automotive field—that of the Chilton Class Journal Company

Many of the readers of this publication know some of these men intimately. Personal contact has given ample assurance of their knowledge, standing and ability. Others you feel you know, even though you never met them, because of the bond of sympathy between writer and reader created by their articles.

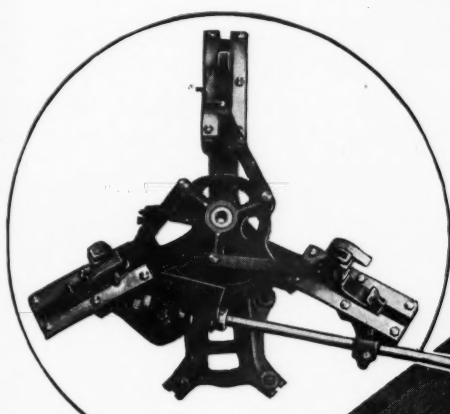
But there are other men on this great staff, equally capable, of whom you probably do not know. The purpose of these brief sketches is to make you familiar with these men, their abilities and attainments. They are as deserving of your respect and admiration as are Chase, Shelton, Shidle, Banigan, Becroft, Collins, Comings—to mention but a few of the more widely-known.

Doubtless you will be surprised at the extent of the Chilton Class Journal editorial staff. Few people realize that this one organization has 29 staff and 5 field editors and 83 correspondents, of whom 20 are in foreign countries. It covers all points in the world where automotive news is likely to break and gives the readers of all the Chilton Class Journal publications fresh and authoritative reports on what is going on in the automotive world.

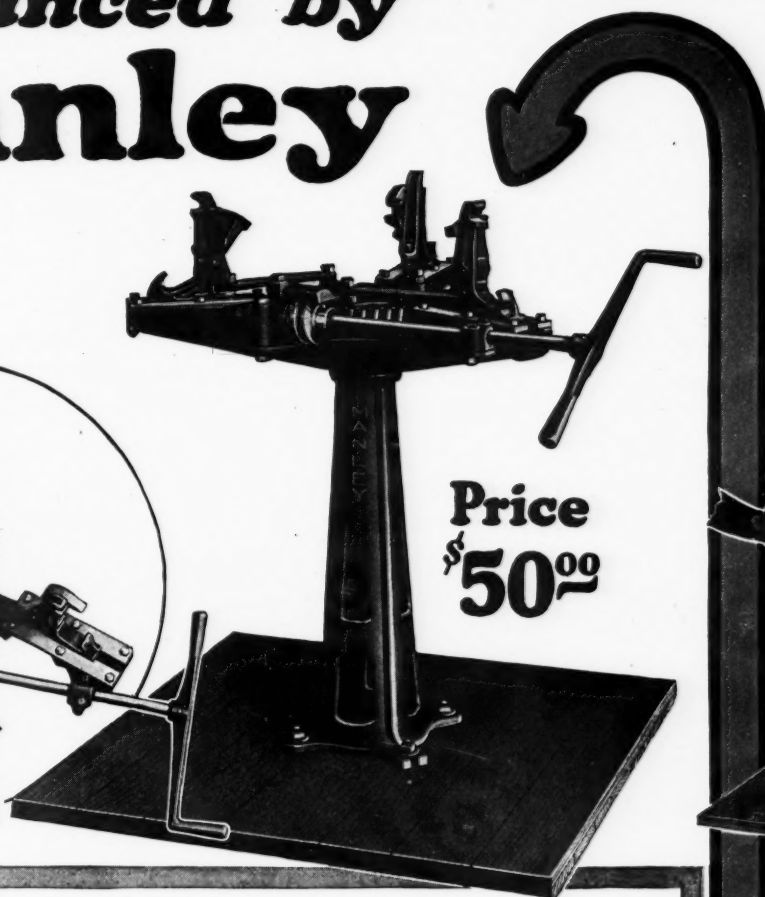
The members of this staff have been selected so as to make a well-rounded organization, covering all possible requirements. Each has been chosen because of his particular fitness for the work he is called upon to do and his knowledge and ability are available to all the publications of the company.

We hope these sketches will make you acquainted with these men and the parts they play in giving you the best-edited publications serving the automotive industry and trade.

# **New Tire Changer Announced by Manley**



New principle  
combination worm  
and sector and  
toggle action.



**Price  
\$50<sup>00</sup>**

Without doubt the fastest and most easily operated Tire Changer ever offered at any price.

It operates on an entirely new principle, which combines in a most unique manner, speed, tremendous power, and ease of operation, at a price no greater than you might pay for a less efficient machine.

**FOR SPLIT RIMS  
OR SOLID RIMS**



Operates on a new principle, combining Worm and Sector and Toggle Action. The Worm and Sector make the operation fast, and the toggle gives a constantly increasing pressure so that no time is lost operating a high ratio gear reduction throughout the entire movement.

A few easy turns of the crank contracts or expands split rims as required.

**TREMENDOUS POWER—EASY OPERATION—HIGH SPEED** and will take care of practically any pneumatic tire job.

It is shipped mounted on a wood base as illustrated, and it is only necessary to uncrate it and put it to work. Because of this mounting you can use it outside during working hours, as it attracts business by impressing motorists with the fact that you are up-to-date.

**SOLID RIM ATTACHMENT**—For all solid rims, including disc and wire wheels. It is arranged with a small rack and pinion press which provides sufficient power to push the tire off the rim no matter how badly rusted it may be.

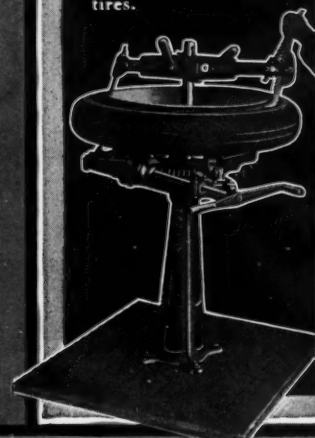
The Solid Rim Attachment may be quickly and easily adjusted for various size rims.

Because of limited space, it is impossible to give detailed specifications here and we urge you to write for the new bulletin which describes this new machine fully.

*Carried in stock by Manley Jobbers*

**SOLID RIM  
ATTACHMENT  
\$15.00 EXTRA**

Rack and Pinion Press principle employed. No further need to worry over rusted on tires.



# **Get a Manley**

**MANLEY MFG. CO., YORK, PA.**



# Your first glimpse of the 1926 Chandler

## New Distinctive Beauty

THE 1926 Chandler, just announced, is bound to attract attention the country over.

Such a distinctive and beautiful car has an assured welcome.

Every detail—body lines, appointments, equipment—has been developed to appeal to all who appreciate the smartness that is also artistic.

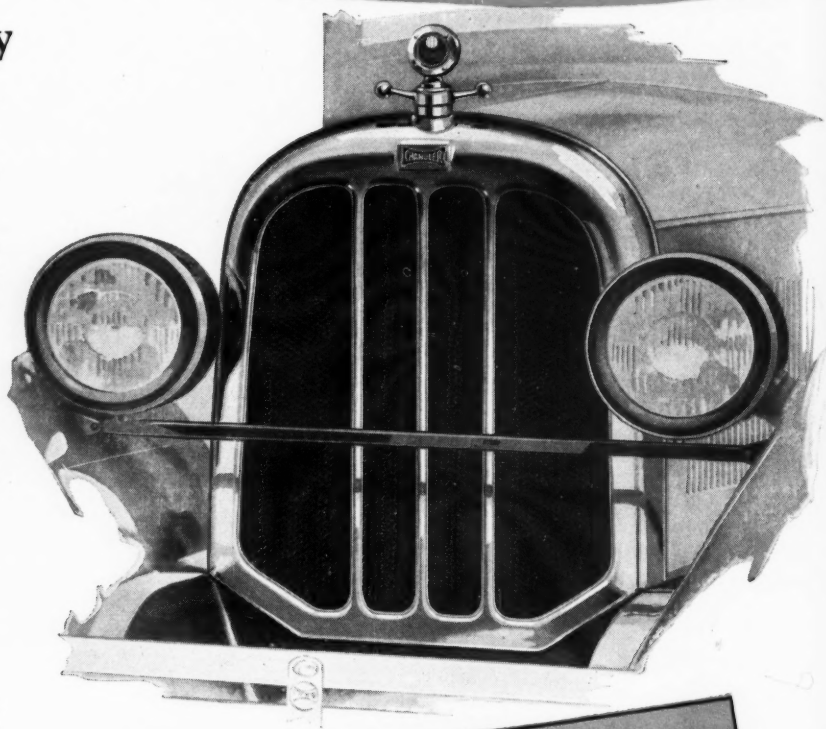
The New Chandler is a car for the critical.

Even the radiator, usually only an exposed mechanical utility in American cars, is given an artistic touch suggested by latest foreign practice.

## A Great Automobile Now Made Greater

This new beauty, dominating though it be, is only the partial expression of 1926 superiority.

Mechanically an already great car has been made still better.



## Another Chandler Sales Advantage

Chandler Dealers are now selling next year's models  
—a big sales advantage.

They also have the exclusive Pikes Peak Motor to demonstrate—built to master a mountain it holds more official records than any other stock car regardless of price  
—a big selling factor.

Chandler Dealers are part of a great organization with 12 years of rapid growth and financial success  
—a permanent, profitable connection.

There may be an opportunity for you to sell the great 1926 Chandler line in your territory  
—why not get the facts?

THE CHANDLER MOTOR CAR COMPANY CLEVELAND  
Export Dept., 1819 Broadway, New York City

Impressive values.  
All Prices f. o. b. Cleveland

# CHANDLER